Welcome to GateWay Community College
Letter from the President

Welcome to GateWay Community College, one of the 10 Maricopa Community Colleges. For more than 50 years, GateWay has served the community and helped thousands of students, like you achieve their educational and career goals.

Driven by its Vision, Mission, Goals, and Values, the college is committed to providing high-quality education through comprehensive services and innovative academic programs. Whether you plan to transfer to a university, enter the workforce with newly attained skills, or take classes for personal enrichment, GateWay offers approximately 150 associate degrees and certificates at locations throughout the Valley.

At GateWay Community College, you have even more pathway options in professional and technical education, university transfer, or trade and technical training, with multiple locations in the Phoenix area – Washington Campus (40th & Washington streets), Central City (12th Street & Buckeye), Deer Valley (29th Avenue & Bell), SouthWest Skill Center (Dysart & Thomas) – and an additional site for our Water Resources Technologies program in Surprise.

Ensuring that you are prepared to enter the workforce or even start your own business, GateWay offers a variety of experiential learning opportunities through simulation in the Center for Health Careers Education, free healthcare and health screenings provided by students in the HUG Clinic and elsewhere, salon and spa services, a Honda and Toyota training facility, a student business incubator that is jointly managed by GateWay’s Center for Entrepreneurial Innovation, and the Maricopa Small Business Development Center.

From service learning to volunteerism, to getting involved in causes you are passionate about, I encourage you to become engaged at GateWay by joining a club, attending an athletic event or participating in one of the many student life activities held on campus throughout the year.

At GateWay, we truly believe that you are the primary reason we exist. On behalf of the faculty and staff, I want to thank you for choosing GateWay. We feel honored that you have selected GateWay among the many other choices. I assure you that a friendly and knowledgeable faculty and staff stand ready to assist you in your pursuit of higher education.

Go Geckos!

Sincerely,

Steven R. Gonzales, Ed.D.
President
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VISION
GateWay Community College - a college for the community - working collectively and responsibly to meet the life-learning needs of our diverse students and community.

MISSION
GateWay Community College provides access to higher education for diverse students and communities. We focus on learning through:

• University Transfer Education  
• General Education  
• Developmental Education  
• Workforce Development  
• Student Development Services

GOALS
ACCESS
Provide access to high-quality education for all students and strengthen educational pathways through increased educational and business partnerships.

RETENTION
Improve the retention of students through the achievement of their education or training goals

SUCCESS
Increase the number of students who achieve their education or training goals as a lifelong endeavor of growth and self-discovery.

COMMUNITY ENGAGEMENT
Enhance civic, social, and cultural engagement opportunities by serving as the community’s college.

ENTREPRENEURISM
Expand and leverage resources that enhance the college’s impact in the community through economic and workforce development.

STEWARDSHIP
Strategically leverage, grow, and utilize resources to ensure student success, responsible stewardship, and sustainability.

VALUES
Students are the primary reason we exist. We value our diverse learning community and respect our students for their life experiences, their achievements, and we appreciate their contributions. For these reasons, GateWay Community College is committed to the following values:

LEARNING
as a lifelong endeavor of growth and self-discovery.

DIVERSITY
as a celebration of the unique richness that all individuals bring to our community and to the learning opportunity it provides.

SERVICE
to students, to each other, and to the community.

TEAMWORK
as a commitment to working together toward student success.

INTEGRITY
as an essential element in our learning environment. We strive to be honest, authentic, consistent, and respectful in our words and actions.

ENTREPRENEURIAL SPIRIT
as critical in accomplishing our mission and goals. Through calculated risk-taking, we see possibilities...not limitations. GateWay Community College is a Maricopa Community College, accredited by the Higher Learning Commission, a Commission of the North Central Association of Colleges.

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VISION
GateWay Community College - a college for the community - working collectively and responsibly to meet the life-learning needs of our diverse students and community.

MISSION
GateWay Community College provides access to higher education for diverse students and communities. We focus on learning through:

• University Transfer Education
• General Education
• Developmental Education
• Workforce Development
• Student Development Services

GOALS
ACCESS
Provide access to high-quality education for all students and strengthen educational pathways through increased educational and business partnerships.

RETENTION
Improve the retention of students through the achievement of their education or training goals.

SUCCESS
Increase the number of students who achieve their education or training goals, complete a degree or certificate, transfer to a university, and/or complete a workforce credential.

COMMUNITY ENGAGEMENT
Enhance civic, social, and cultural engagement opportunities by serving as the community’s college.

ENTREPRENEURISM
Expand and leverage resources that enhance the college’s impact in the community through economic and workforce development.

STEWARDSHIP
Strategically leverage, grow, and utilize resources to ensure student success, responsible stewardship, and sustainability.

VALUES
Students are the primary reason we exist. We value our diverse learning community and respect our students for their life experiences, their achievements, and we appreciate their contributions. For these reasons, GateWay is committed to the following values:

LEARNING
as a lifelong endeavor of growth and self-discovery.

DIVERSITY
as a celebration of the unique richness that all individuals bring to our community and to the learning opportunity it provides.

SERVICE
to students, to each other, and to the community.

TEAMWORK
as a commitment to working together toward student success.

INTEGRITY
as an essential element in our learning environment. We strive to be honest, authentic, consistent, and respectful in our words and actions.

ENTREPRENEURIAL SPIRIT
as critical in accomplishing our mission and goals. Through calculated risk-taking, we see possibilities—not limitations. GateWay Community College is a Maricopa Community College, accredited by the Higher Learning Commission, a Commission of the North Central Association of Colleges.
Please take the time to read carefully and reflect on the Achieve Success steps identified below. The objective of this document is to inform students of their personal responsibilities for their own education and to focus faculty and staff on what they should expect of students wishing to maximize their higher education experience.

**Achieve Success**

**Attendance...** Students are expected to attend all classes, to come to class prepared, to be on time, to have all required materials, to complete all homework, and to be prepared to participate in classroom discussions and learning activities. Being absent does not excuse you from your responsibilities regarding material covered, quizzes, exams, homework, experiments or projects.

**Critical Thinking...** Today's workplace requires employees who can systematically apply knowledge and critical thinking skills. It is not enough to memorize facts or figures; students must be able to use information to further investigate their workplace as well as world events.

**Honesty...** There is no substitute for honesty. Students are responsible for knowing the standards of conduct and student policies found in the GateWay Community College Catalog and Student Handbook, and must adhere to these standards at all times.

**Intensity...** Attitude is everything! Education is important for personal success today more than ever before. Make education a priority. Success demands persistence and the intense commitment of time and talents.

**Expectation...** Expect to be taught well, but also accept your personal responsibility to learn. Faculty can expose you to an abundance of information, and they can provide you with opportunities and activities that are conducive to learning. As a student, you must seize opportunities to apply that information to specific situations that confront you in your everyday life.

**Value...** Value your education. Make it your personal goal to graduate with the knowledge and skills necessary to be one of the best at what you do.

**Enlightenment...** Ask yourself why you are seeking a higher education. Challenge yourself to achieve success at the highest level possible.

**Institutional Learning Outcomes**

GateWay Community College is committed to student success through assessment for student learning. It is the aspiration of all faculty and staff that graduates of GateWay Community College will demonstrate proficiency in our three Institutional Learning Outcomes: Effective Communication, Critical Thinking and Problem Solving, and Personal Responsibility and Civic Engagement.

We believe that these three Institutional Learning Outcomes are beneficial to students as they transition to the workforce or continue their academic studies, and endeavor to become engaged global citizens.

**Effective Communication**

Learners will communicate effectively in a range of social, academic, and professional contexts as defined by five competency areas: emotional intelligence, active listening, written, oral and visual modes, effective use of technology, and collaboration skills.

**Critical Thinking and Problem Solving**

Learners will develop the mindset to gather, synthesize, analyze, and evaluate information to solve problems and make evidence-based decisions as defined by four competency areas: metacognition, decision making, information literacy, and analytical inquiry/quantitative reasoning.

**Personal Responsibility and Civic Engagement**

Learners will demonstrate personal growth and responsibility to others by addressing diverse cultural, civic, social, and global issues.
ACHIEVE SUCCESS

Please take the time to read carefully and reflect on the Achieve Success steps identified below.

The objective of this document is to inform students of their personal responsibilities for their own education and to focus faculty and staff on what they should expect of students wishing to maximize their higher education experience.

A ttendance... Students are expected to attend all classes, to come to class prepared, to be on time, to have all required materials, to complete all homework, and to be prepared to participate in classroom discussions and learning activities. Being absent does not excuse you from your responsibilities regarding material covered, quizzes, exams, homework, experiments or projects.

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H onesty... There is no substitute for honesty. Students are responsible for knowing the standards of conduct and student policies found in the GateWay Community College Catalog and Student Handbook, and must adhere to these standards at all times.

I ntenisty... Attitude is everything! Education is important for personal success today more than ever before. Make education a priority. Success demands persistence and the intense commitment of time and talent.

E xpectation... Expect to be taught well, but also accept your personal responsibility to learn. Faculty can expose you to an abundance of information, and they can provide you with opportunities and activities that are conducive to learning. As a student, you must seize opportunities to apply that information to specific situations that confront you in your everyday life.

V alue... Value your education. Make it your personal goal to graduate with the knowledge and skills necessary to be one of the best at what you do.

E nlitement... Ask yourself why you are seeking a higher education. Challenge yourself to achieve success at the highest level possible.

INSTITUTIONAL LEARNING OUTCOMES

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We believe that these three Institutional Learning Outcomes are beneficial to students as they transition to the workforce or continue their academic studies, and endeavor to become engaged global citizens.

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Learners will develop the mindset to gather, synthesize, analyze, and evaluate information to solve problems and make evidence-based decisions as defined by four competency areas: metacognition, decision making, information literacy, and analytical inquiry/quantitative reasoning.

Personal Responsibility and Civic Engagement

Learners will demonstrate personal growth and responsibility to others by addressing diverse cultural, civic, social, and global issues.
ACADEMIC CALENDAR*

2019 - 2020

FALL SEMESTER 2019
Saturday Registration (9:00 a.m.-11:00 p.m.) ......................................................... August 10, 2019
New Student Orientation ....................................................................................... August 20, 2019
Saturday Registration (9:00 a.m.-11:00 p.m.) ......................................................... August 10, 2019
New Student Orientation ....................................................................................... August 14 & 17, 2019
Saturday Registration (9:00 a.m.-1:00 p.m.) ......................................................... August 17, 2019
Classes Begin (Saturday) - Official Start Date of Semester .................................... August 17, 2019
In-Service Day - No classes for Trade & Technical Training ................................... August 19, 2019
Labor Day Observance - Campus Closed ............................................................... September 2, 2019
Spring 2020 Priority Registration for Currently Enrolled Students ......................... September 30, 2019
Spring 2020 Open Registration Begins ................................................................... October 7, 2019
Last Day for Withdrawal Without Instructor's Signature ................................. November 11, 2019
Graduation and Certificate Application Deadline .............................................. November 19, 2019
Veterans Day Observance - Campus Closed .................................................. November 28, 2019
Thanksgiving Holiday - Campus Closed ............................................................. November 28 - December 1, 2019
Final Exams ........................................................................................................... December 2 - 9, 2019
Mid-Year Recess Begins for Students ................................................................. December 9, 2019
Grades Due ............................................................................................................. December 13, 2019
Winter Break - Campus Closed ............................................................................. December 16, 2019
Spring Break - Campus Closed ............................................................................. January 20, 2020
Spring Break - No Classes Scheduled ................................................................. January 20, 2020
Graduation and Certificate Application Deadline .............................................. January 22, 2020
Summer/Fall 2020 Priority Registration for Currently Enrolled Students .......... March 2, 2020
Last Day for Withdrawal Without Instructor's Signature ..................................... March 2, 2020
Spring Break - No Classes Scheduled ................................................................. March 9 - 13, 2020
Spring Break - Campus Closed ............................................................................. March 12, 2020
Fall 2020 Open Registration Begins .................................................................... March 16, 2020
Final Exams ............................................................................................................. May 4 - 7, 2020
Commencement ..................................................................................................... May 8, 2020
Grades Due ............................................................................................................. May 11, 2020
Memorial Day Observance - Campus Closed ................................................... May 25, 2020

SPRING SEMESTER 2020
Campus Re-Opens ................................................................................................ January 2, 2020
New Student Orientations ..................................................................................... January 8 & 11, 2020
In-Service Day - No classes for Trade & Technical Training .............................. January 11, 2020
Classes Begin (Saturday) - Official Start Date of Semester ................................. January 11, 2020
Martin Luther King Day Observance - Campus Closed .................................. January 20, 2020
President's Day Observance - Campus Closed ................................................ January 20, 2020
Summer/Fall 2020 Priority Registration for Currently Enrolled Students .......... February 17, 2020
Graduation and Certificate Application Deadline .............................................. February 17, 2020
Last Day for Withdrawal Without Instructor's Signature ..................................... March 2, 2020
Spring Break - No Classes Scheduled ................................................................. March 9 - 15, 2020
Spring Break - Campus Closed ............................................................................. March 12 - 15, 2020
Fall 2020 Open Registration Begins .................................................................... March 16, 2020
Final Exams ............................................................................................................. May 4 - 7, 2020
Commencement ..................................................................................................... May 8, 2020
Grades Due ............................................................................................................. May 11, 2020
Memorial Day Observance - Campus Closed ................................................... May 25, 2020

SUMMER TERM 2020
Classes Begin ........................................................................................................... May 26, 2020
Graduation and Certificate Application Deadline .............................................. June 1, 2020
Summer Break for Clock Hour Programs Only ................................................ June 29 - July 1, 2020
Independence Day Observance - Campus Closed ........................................... June 29, 2020
Summer/Fall 2020 Priority Registration for Currently Enrolled Students .......... July 2, 2020
Classes End ............................................................................................................. July 30, 2020
Grades Due ............................................................................................................. August 3, 2020

GateWay Locations

GATEWAY LOCATIONS

2019 - 2020

Central City (CC)
1245 East Buckeye Road // Phoenix, AZ // 85034
This location consists of three buildings, with a total square footage of 86,911.

Deer Valley (DV)
2931 West Bell Road // Phoenix, AZ // 85053
This location consists of one building, with a total square footage of 26,802.

Washington Campus (WA)
108 North 40th Street // Phoenix, AZ // 85034
This location consists of eleven buildings, with a total square footage of 400,000.

Southwest Skill Center (SWSC)
3000 North Dysart Road // Avondale, AZ // 85392
This location consists of one building.

Maricopa County Community College District and the 10 colleges are closed on Fridays in the summer, from approximately mid-May to the beginning of August. GateWay Community College's Central City and Deer Valley locations are also closed during the first week of July. See college class schedule for specific dates for registration and schedule adjustment. *All dates subject to change.

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## ACADEMIC CALENDAR*  
### 2019 - 2020

### FALL SEMESTER 2019
- **Saturday Registration (9:00 a.m.-1:00 p.m.)**: August 10, 2019
- **New Student Orientation**: August 14 & 17, 2019
- **Saturday Registration (9:00 a.m.-1:00 p.m.)**: August 17, 2019
- **Classes Begin (Saturday) - Official Start Date of Semester**: August 17, 2019
- **In-Service Day - No classes for Trade & Technical Training**: August 24, 2019
- **Labor Day Observance - Campus Closed**: September 2, 2019
- **Spring 2020 Priority Registration for Currently Enrolled Students**: September 30, 2019
- **Spring 2020 Open Registration Begins**: October 7, 2019
- **Last Day for Withdrawal Without Instructor’s Signature**: November 1, 2019
- **Veterans Day Observance - Campus Closed**: November 11, 2019
- **Thanksgiving Holiday - Campus Closed**: November 28 - December 1, 2019
- **Final Exams**: December 9 - 12, 2019
- **Mid-Year Reopens Begins for Students**: December 13, 2019
- **Grades Due**: December 16, 2019
- **Winter Break - Campus Closed**: December 25, 2019 - January 1, 2020

### SPRING SEMESTER 2020
- **Campus Re-Opens**: January 2, 2020
- **New Student Orientations**: January 8 & 11, 2020
- **In-Service Day - No classes for Trade & Technical Training**: January 11, 2020
- **Saturday Registration (9:00 a.m.-1:00 p.m.)**: January 11, 2020
- **Classes Begin (Saturday) - Official Start Date of Semester**: January 11, 2020
- **Martin Luther King Day Observance - Campus Closed**: January 20, 2020
- **President’s Day Observance - Campus Closed**: February 17, 2020
- **Summer/Fall 2020 Priority Registration for Currently Enrolled Students**: March 2, 2020
- **Graduation and Certificate Application Deadline**: March 2, 2020
- **Spring Break - No Classes Scheduled**: March 9 - 15, 2020
- **Spring Break - Campus Closed**: March 12 – 15, 2020
- **Fall 2020 Open Registration Begins**: May 4 - 7, 2020
- **Commencement**: May 8, 2020
- **Grades Due**: May 11, 2020
- **Memorial Day Observance - Campus Closed**: May 25, 2020

### SUMMER TERM 2020
- **Classes Begin**: May 26, 2020
- **Graduation and Certificate Application Deadline**: June 1, 2020
- **Summer Break for Clock Hour Programs Only**: July 1, 2020
- **Independence Day Observance - Campus Closed**: July 2, 2020
- **Classes End**: July 30, 2020
- **Grades Due**: August 3, 2020

Maricopa County Community College District and the 10 colleges are closed on Fridays in the summer, from approximately mid-May to the beginning of August. Gateway Community College’s Central City and Deer Valley locations are also closed during the first week of July. See college class schedule for specific dates for registration and schedule adjustment. All dates subject to change.

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### GateWay Locations

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This location consists of eleven buildings, with a total square footage of 400,000.

**Southwest Skill Center (SWSC)**  
3000 North Dysart Road // Avondale, AZ // 85392  
This location consists of one building.
INSTRUCTIONAL DIVISIONS/DEPARTMENTS

ALLIED HEALTH
Chair: Monica Wadsworth-Seibel
(602) 286-8526

EEG – Electromyographic (EMG) Technology
HCC – Health Core Curriculum
HCS – Hospital Central Service
HRC – Healthcare Regulatory Compliance
HSM – Health Services Management
HUC – Health Unit Coordinator
PON – Perioperative Nursing
PSG – Polysomnographic Technology
PTA – Physical Therapist Assistant
SGT – Surgical Technology

BUSINESS AND INFORMATION TECHNOLOGIES
Chair: Craig Santicola
(602) 286-8936

ACC – Accounting
AS – Administration of Justice Studies
BPC – Business-Personal Computers
CIS – Computer Information Systems
CNT – CISCO Networking Technology
CTR – Court Reporting
ECN – Economics
EPS – Entrepreneurial Studies
GBS – General Business
ITS – Information Technology
MGT – Management
MKT – Marketing
MST – Microsoft Technology
SBU – Society & Business
TQM – Total Quality Management

COUNSELING
Chair: Frank Zamora
(602) 286-8127

CPD – Counseling/Personal Development
EXS – Exercise Science
HEC – Health Science
PED – Physical Activities/Lifetime Fitness
WED – Wellness Education

INDUSTRIAL TECHNOLOGY
Chair: Craig Urbanski
(602) 286-8616

AUT – Automotive Technology
FAC – Technology Facilities
HVA – Heating, Ventilating, Air Conditioning & Refrigeration
IMC – Interstate Mechanical Contractors Apprentice
MET – Manufacturing Technology
OSH – Occupational Safety and Health Technology
WRT – Water Resources Technology

LITERACY, LANGUAGE AND LITERATURE
Chair: Shannon McGrath
(602) 286-8742

ENG – English
ENH – English Humanities
ESL – English as a Second Language
RDG – Reading
SPA – Spanish

MATH AND SCIENCES
Chair: Douglas Walker
(602) 286-8711

BIO – Biology
CHM – Chemistry
FON – Food and Nutrition
GLG – Geology
GIS – Geographic Information System
MAT – Mathematics
PHY – Physics

MEDICAL IMAGING AND CARDIOPULMONARY SCIENCES
Chair: Sandra Hinski
(602) 286-8524

DMI – Diagnostic Medical Imaging
DMI – Diagnostic Medical Sonography
ICE – Imaging – Continuing Education
NUR – Nursing

NURSING
Director: Margi Schultz
(602) 286-8530

HCR – Health Care Related Education
ICE – Imaging – Continuing Education
NUR – Nursing

TRADE & TECHNICAL TRAINING INSTRUCTIONAL DIVISIONS

BEAUTY & WELLNESS
Program Manager: Shala Dveirin
(602) 238-4365

COS – Cosmetology
COS – Hair Stylist
EST – Esthetician
PMP – Massage Therapy

HEALTHCARE
Program Manager: Jennifer Kline
(602) 238-4330

EMC – Emergency Medical Services and Fire Preparatory Academy
MIC – Medical Interpreter - Spanish
OFC – Ophthalmic Medical Assistant
PHC – Pharmacy Technician
PLC – Phlebotomy

TRADES & TECHNOLOGY
Program Manager: R. Mark Woehl
(602) 238-4379

ABO – Auto Body
CNP – Computer Support
ELK – Electrical
HVC – HVAC
ISP – Computer Foundations
MCP – Meat Cutting
MTO – Precision Machining, CNC
WTO – Welding Trades

ARTS, HUMANITIES, SOCIAL AND BEHAVIORAL SCIENCES
Chair: Susan Mills
(602) 286-6487

ART – Art
ASB – Anthropology
ART – Art
COM – Communication
EDU – Education
HIS – History
HUM – Humanities
PHI – Philosophy

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### Allied Health
- **Chair:** Monica Wadsworth-Seibel  
  (602) 286-8526
- **Departments:**
  - EEG – Electroneurodiagnostic (END) Technology
  - HCC – Health Care Curriculum
  - HCS – Hospital Central Service
  - HRC – Healthcare Regulatory Compliance
  - HSM – Health Services Management
  - HUC – Health Unit Coordinator
  - PPON – Perioperative Nursing
  - PTA – Physical Therapist Assistant
  - SGT – Surgical Technology
  - ALLIED HEALTH
    - Chair: Monica Wadsworth-Seibel
    - (602) 286-8526
    - EEG – Electroneurodiagnostic (END) Technology
    - HCC – Health Core Curriculum
    - HCS – Hospital Central Service
    - HRC – Healthcare Regulatory Compliance
    - HSM – Health Services Management
    - HUC – Health Unit Coordinator
    - PPON – Perioperative Nursing
    - PTA – Physical Therapist Assistant
    - SGT – Surgical Technology

### Business and Information Technologies
- **Chair:** Craig Santicola  
  (602) 286-8936
- **Departments:**
  - ACC – Accounting
  - AJS – Administration of Justice Studies
  - CTR – Court Reporting
  - ECN – Economics
  - EPS – Entrepreneurial Studies
  - GBS – General Business
  - ITS – Information Technology Security
  - MGT – Management
  - MKT – Marketing
  - MST – Microsoft Technology
  - SBU – Society & Business
  - TQM – Total Quality Management
  - BUSINESS AND INFORMATION TECHNOLOGIES
    - Chair: Craig Santicola
    - (602) 286-8936
    - ACC – Accounting
    - AJS – Administration of Justice Studies
    - CTR – Court Reporting
    - ECN – Economics
    - EPS – Entrepreneurial Studies
    - GBS – General Business
    - ITS – Information Technology Security
    - MGT – Management
    - MKT – Marketing
    - MST – Microsoft Technology
    - SBU – Society & Business
    - TQM – Total Quality Management

### Counseling
- **Chair:** Frank Zamora  
  (602) 286-8127
- **Departments:**
  - CRD – Counseling/Personal Development
  - EMS – Exercise Science
  - HES – Health Science
  - PED – Physical Activities/Lifetime Fitness
  - WED – Wellness Education
  - COUNSELING
    - Chair: Frank Zamora
    - (602) 286-8127
    - CRD – Counseling/Personal Development
    - EMS – Exercise Science
    - HES – Health Science
    - PED – Physical Activities/Lifetime Fitness
    - WED – Wellness Education

### Industrial Technology
- **Chair:** Craig Urbanski  
  (602) 286-8616
- **Departments:**
  - AUT – Automotive Technology
  - FAC – Technology Facilities
  - HVA – Heating, Ventilating, Air Conditioning & Refrigeration
  - IMC – Interstate Mechanical Contractors Apprentice
  - MET – Manufacturing Technology
  - GSH – Occupational Safety and Health Technology
  - WRT – Water Resources Technology
  - INDUSTRIAL TECHNOLOGY
    - Chair: Craig Urbanski
    - (602) 286-8616
    - AUT – Automotive Technology
    - FAC – Technology Facilities
    - HVA – Heating, Ventilating, Air Conditioning & Refrigeration
    - IMC – Interstate Mechanical Contractors Apprentice
    - MET – Manufacturing Technology
    - GSH – Occupational Safety and Health Technology
    - WRT – Water Resources Technology

### LITERACY, LANGUAGE AND LITERATURE
- **Chair:** Shannon McGrath  
  (602) 286-8742
- **Departments:**
  - CRE – Critical Reading
  - ENG – English
  - ENH – English Humanities
  - ESL – English as a Second Language
  - RDG – Reading
  - SPA – Spanish
  - LITERACY, LANGUAGE AND LITERATURE
    - Chair: Shannon McGrath
    - (602) 286-8742
    - CRE – Critical Reading
    - ENG – English
    - ENH – English Humanities
    - ESL – English as a Second Language
    - RDG – Reading
    - SPA – Spanish

### Medical Imaging and Cardiopulmonary Sciences
- **Chair:** Sandra Hinski  
  (602) 286-8524
- **Departments:**
  - DMI – Diagnostic Medical Imaging
  - DRM – Diagnostic Medical Sonography
  - ICE – Imaging - Continuing Education
  - NUC – Nuclear Medicine Technology
  - RES – Respiratory Care
  - MEDICAL IMAGING AND CARDIOPULMONARY SCIENCES
    - Chair: Sandra Hinski
    - (602) 286-8524
    - DMI – Diagnostic Medical Imaging
    - DRM – Diagnostic Medical Sonography
    - ICE – Imaging - Continuing Education
    - NUC – Nuclear Medicine Technology
    - RES – Respiratory Care

### Nursing
- **Director:** Margi Schultz  
  (602) 286-8530
- **Departments:**
  - HCR – Health Care Related Education
  - ICE – Imaging - Continuing Education
  - NCE – Nursing - Continuing Education
  - NUC – Nuclear Medicine Technology
  - NUR – Nursing
  - NURSING
    - Director: Margi Schultz
    - (602) 286-8530
    - HCR – Health Care Related Education
    - ICE – Imaging - Continuing Education
    - NCE – Nursing - Continuing Education
    - NUC – Nuclear Medicine Technology
    - NUR – Nursing

### Beauty & Wellness
- **Program Manager:** Shala Dveirin  
  (602) 238-4365
- **Departments:**
  - COS – Cosmetology
  - COS – Cosmetology Instructor
  - EST – Esthetician
  - PMP – Massage Therapy
  - BEAUTY & WELLNESS
    - Program Manager: Shala Dveirin
    - (602) 238-4365
    - COS – Cosmetology
    - COS – Cosmetology Instructor
    - EST – Esthetician
    - PMP – Massage Therapy

### Healthcare
- **Program Manager:** Jennifer Kline  
  (602) 238-4330
- **Departments:**
  - EMG – Emergency Medical Services
  - EMRC – Emergency Medical Regulations
  - MIC – Medical Interpreter - Spanish
  - OMG – Ophthalmic Medical Assistant
  - PHC – Pharmacy Technician
  - PLC – Phlebotomy
  - HEALTHCARE
    - Program Manager: Jennifer Kline
    - (602) 238-4330
    - EMG – Emergency Medical Services
    - EMRC – Emergency Medical Regulations
    - MIC – Medical Interpreter - Spanish
    - OMG – Ophthalmic Medical Assistant
    - PHC – Pharmacy Technician
    - PLC – Phlebotomy

### Trades & Technology
- **Program Manager:** Ann Lopez  
  (602) 286-8676
- **Departments:**
  - ABA – Arizona Builders Alliance
  - ABC – Associated Builders and Contractors
  - CNS – Construction
  - CONT – Continuous Education
  - HVA – Heating, Ventilating, Air Conditioning & Refrigeration
  - IMC – Interstate Mechanical Contractors Apprentice
  - MET – Manufacturing Technology
  - OSH – Occupational Safety and Health Technology
  - WTO – Welding Trades
  - TRADES & TECHNOLOGY
    - Program Manager: Ann Lopez
    - (602) 286-8676
    - ABA – Arizona Builders Alliance
    - ABC – Associated Builders and Contractors
    - CNS – Construction
    - CONT – Continuous Education
    - HVA – Heating, Ventilating, Air Conditioning & Refrigeration
    - IMC – Interstate Mechanical Contractors Apprentice
    - MET – Manufacturing Technology
    - OSH – Occupational Safety and Health Technology
    - WTO – Welding Trades
Program Matrix 2019-2020

OCCUPATIONAL & PROFESSIONAL PROGRAM MATRIX
The Maricopa County Community College Occupational Program Matrix identifies all programs currently available within
the 10 community colleges and two skill centers of the district. The programs are grouped under broad occupational
areas as requested by the colleges. For specific information regarding individual programs, contact the college(s) listed
as participating institutions.

COLLEGE ACRONYM/NAME:
CG: Chandler Gilbert Community College
EM: Estrella Mountain Community College
GC: Glendale Community College
GW: GateWay Community College

MC: Mesa Community College
PC: Phoenix College
PV: Paradise Valley Community College
RS: Rio Salado College

AGRICULTURE, FOOD AND NATURAL RESOURCES

Environmental and Natural
Resource Conservation......................................................................PC
Environmental and Natural Resource
Equine Science....................................................................................SC
Landscape Aide................................................................................. MC
Landscape Specialist........................................................................ MC
Sustainability.......................................................................................PC
Sustainable Agriculture.................................................................... MC
Urban Horticulture........................................................................... MC
Veterinary Technology/Animal Health........................................... MC

ARCHITECTURE AND CONSTRUCTION

Air Conditioning/Refrigeration/Facilities........................................ GW
Architectural CADD Level III............................................................. MC
Architectural Detailing CADD Level III............................................ MC
Architectural Technology...................................................................SC
Architecture....................................................................................... MC
Building Inspection........................................................................... MC
Commercial Drafting CADD Level II................................................ MC
Computer Aided Design and Drafting CADD Level I..................... MC
Computer Aided Drafting................................................................. MC
Construction...................................................................................... MC
Construction Drafting CADD Level III............................................. MC
Constructon Trades: Carpentry.......................................................GW
Construction Trades: Construction Management.........................GW
Construction Trades: Construction Worker Training
for Cranes/Rigging Equipment...................................................GW
Construction Trades: Electricity...................................................... GW
Construction Trades: Heat and Frost Insulation........................... GW
Construction Trades: Ironworking.................................................. GW
Construction Trades - Mechanical Trades: Pipefitting................. GW
Construction Trades - Mechanical Trades: Plumbing................... GW
Construction Trades - Mechanical Trades: Sheet Metal............... GW
Construction Trades: Millwrighting................................................ GW
Construction Trades: Painting and Drywalling.............................. GW
Construction Trades: Pre-Apprenticeship...................................... GW
Electrical Installer..............................................................................GW
Electrical Technician..........................................................................GW
Electrical Technology........................................................................GW
Electrical Technology: Commercial Wiring.....................................GW
Electrical Technology: Industrial Wiring.........................................GW
Electrical Technology: Residential Wiring.......................................GW
Home Inspection............................................................................... MC
Mechanical Drafting......................................................................... MC
Plan Review........................................................................................ MC
Power Plant Technology...................................................................EM
Pre-Contractor Licensing................................................................. MC
Residential and Light Commercial Air Conditioning..................... GW
Residential Drafting CADD Level II.................................................. MC
Survey and Civil Drafting - CADD Level II....................................... MC
Workforce Development: Carpentry Level I....................................RS
Workforce Development: Carpentry Level II...................................RS
Workforce Development: Furniture
Construction/Refinishing Level I..................................................RS
Workforce Development: Furniture
Construction/Refinishing Level II.................................................RS

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SC: Scottsdale Community College
SM: South Mountain Community College

ART, A/V TECHNOLOGY AND COMMUNICATION

Adolescent Development............................................................GC, RS
Adult Development and Aging...................................................GC, RS
Alteration Specialist.......................................................................... MC
Apparel Construction.........................................................................PC
Audio Production Technologies............................ GC, MC, PC, PV, SC
Beginning Piano Pedagogy.............................................................. MC
Broadband Telecommunications..................................................... RS
Broadband Telecommunications: Account Services..................... RS
Broadband Telecommunications: Field Operations...................... RS
Broadband Telecommunications: Technical Support Services... RS
Business.......................................................................................MC, SC
Business (Fastrack)............................................................................ SC
Business Management..................................................................... SM
Business Office Assistant..................................................................GC
Business Technology Specialist...................................................... GW
Computer Applications......................................................................PC
Computer Graphic Design.................................................................PC
Costume Design and Production.................................................... MC
Costuming ...........................................................................................PC
Court Reporting: Judicial.................................................................. GW
Court Reporting: Scoping/Transcription........................................ GW
Dance Technology..............................................................................SC
Design (CAD) Technician................................................................. MC
Digital Media Arts............................................................................... GC
Disc Jockey Techniques.............................................................. MC, SC
Family Life Education...................................................................GC, RS
Fashion Design....................................................................................PC
Fashion Design Level I........................................................................PC
Fashion Design Level II.......................................................................PC
Fashion Illustration.............................................................................PC
Fashion Merchandising......................................................................PC
Fashion Merchandising and Design............................................... MC
Graphic Design: Visual Communication...........................................SC
Image Consultant.............................................................................. MC
Interior Design......................................................................MC, PC, SC
Interior Design: Advanced............................................................... MC
Interior Merchandising.........................................................MC, PC, SC
Intermediate Piano Pedagogy......................................................... MC
Journalism and New Media Studies.............................GC, MC, PV, SC
Music Business..........................................CG, GC, MC, PC, PV, SC, SM
Parent Education.........................................................................GC, RS
Pattern Design Level I.........................................................................PC
Pattern Design Level II........................................................................PC
Photography.................................................................................GC, PC
Textile and Apparel: Fashion Computer-Assisted.........................MC
Textile and Apparel: Fashion Illustrating Specialist...................... MC
Textile and Apparel: Industrial Sewing Technician....................... MC
Textile and Apparel: Product Development.................................. MC
Workforce Development: Graphic Arts Level I................................RS
Workforce Development: Graphic Arts Level II...............................RS

BUSINESS, MANAGEMENT AND ADMINISTRATION

Accounting............................................... CG, EM, GC, GW, PC, RS, SM
Accounting Paraprofessional........................................................... GC
Accounting – Specialized Para-Professional....................................PV
Administrative Professional................................................ MC, PC, PV
Administrative Technology.............................................................. GW
Apprentice Meat Cutter....................................................................GW

Program Matrix 2019-2020
Automobile Insurance Claims: Customer Service...........................RS
Automobile Insurance: Customer Service ......................................RS
Bookkeeping....................................................................................... SC
Business Technology Specialist.......................................................GW
Credit Counseling: Customer Service...............................................RS
Customer Service Management.......................................................EM
Entrepreneurial Studies Level I........................... GW, MC, PV, RS, SM
Entrepreneurial Studies Level II.......................... GW, MC, PV, RS, SM
General Business..............................CG, GC, GW, MC, PC, RS, SC, SM
General Business Specialized...........................................................PV
Human Resources Management......................................................PC
Human Services Assistance: Public Assistance Eligibility...............RS
Human Services-Specialist: Customer Service................................RS
Human Services-Unemployment Insurance: Customer Service...RS
International Business.......................................................................PV
International Trade........................................................................... MC
Marketing........................................................................ PC, PV, SC, SM
Management.........................................................................MC, PC, PV
Microcomputer Accounting...............................................................PV
Middle Management...................................................................GC, PV
Military Leadership.............................................................................RS
Motor Vehicle: Customer Service......................................................RS
Office Technology............................................................................. GW
Organizational Leadership.................... CG, GC, EM, GW, MC, PV, RS
Organizational Management........................CG, GC, EM, GW, MC, RS
Paralegal Studies.................................................................................PC
Pharmacy: Customer Service...........................................................SM
Project Management........................................................................ MC
Public Relations...........................................................................MC, GC
Quality Customer Service..................................................................RS
Retail Management..........................CG, GC, GW, MC, PC, RS, SC, SM
Retail Sales Manager........................................................................ MC
Salesmanship.................................................................................... MC
Small Business..................................................................................MC
Small Business Entrepreneurship.....................................GC, GW, SM
Small Business Management...................................................EM, GW
Small Business Start-Up..................................CG, MC, PC, PV, RS, SM
Social Media Marketing................................................CG, MC, SC, SM
Sports Management............................................................. GC, PV, SC
Supervision......................................................................................... GC
Supervision and Management I.......................................................SM
Supervision and Management II......................................................SM
Technology Support Analyst Level I................................................ MC
Utilities Customer Service..................................................................RS
Water Services: Customer Service....................................................RS

EDUCATION AND TRAINING

Adult Learning and Coaching Development....................................RS
Adult Learning and Development.....................................................RS
Child and Family Organizations Management
and Administration.................................................................GC, RS
Child Development Associate (CDA) Preparation..... GC, PV, SM, EM
Curriculum for Young Children.........................................................PC
Early Care Specialist.......................................................................... MC
Early Childhood Administration and Management.............. GC, RSC
Early Childhood Classroom Management.......................................PC
Early Childhood Development..........................................................PC
Early Childhood Education.................................................. EM, GC, PV
Early Childhood Education and Administration:
Birth through Age Five.......................................................................PC
Early Learning and Development................................CG, MC, RS, SC
Family Child Care Management................................................ RS, SM
Foundations of Student Services.....................................................EM
Gifted Education EM
Infant and Toddler Development............................................. RS, SM
Instructional Assistance............................................................ MC, SM
Reading Specialist............................................................................. MC
Workforce Development and Community Re-Entry.......................RS

ENVIRONMENTAL TECHNOLOGY

Energy Systems Technology..............................................................RS
Geospatial Technologies.................................................................. MC
Occupational Safety and Health Technology................................ GW
Safety, Health and Environmental Studies......................................PV

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Wastewater Treatment.................................................................... GW
Water Resources Technologies.......................................................GW
Water Treatment...............................................................................GW

FINANCE

Bank Account Management: Customer Service............................. RS
Banking and Finance......................................................................... PC
Certified Residential Appraiser....................................................... MC
Licensed Real Estate Appraiser....................................................... MC
Real Estate.......................................................................................... PC
Real Estate: Prelicense..............................................................MC, SM
Residential Appraisal Trainee.......................................................... MC

GOVERNMENT AND PUBLIC ADMINISTRATION

Public Administration........................................................................ RS
Public Administration: Legal Services.............................................. RS
Tribal Development........................................................................... SC

HEALTH SCIENCE

Advanced Behavioral Health Sciences ................................... GC, SM
Advanced Emergency Medical Technology (Paramedic).........PC, PV
Basic Behavioral Health............................................................ GC, SM
Clinical Dental Assisting.................................................................... RS
Community Dental Health Coordination........................................ RS
Community Emergency Response Team (CERT): Level I............... PC
Computed Tomography.................................................................. GW
Dental Assisting.................................................................................. PC
Dental Assisting Technology............................................................. RS
Dental Hygiene..................................................................... MC, PC, RS
Developmental Disabilities Specialist..............................................GC
Diagnostic Medical Sonography..................................................... GW
Diagnostic Medical Sonography: Vascular Technology............... GW
Electroneurodiagnostic (END) Technology................................... GW
Emergency Communications and Deployment............................. PC
Emergency Medical Services and Fire Preparatory Academy.... GW
Emergency Medical Technology (EMT).......................................... GW
Fast Track Practical Nursing........................................................... GW
Health Information Technology....................................................... PC
Health Information: Long Term Care Settings............................... PC
Health Services Management........................................................ GW
Health Unit Coordinating/Patient Care Associate........................ GW
Healthcare Regulatory Compliance............................................... GW
Histologic Technology....................................................................... PC
Hospital Central Service Technology............................................. GW
Laboratory Assisting.......................................................................... PC
Magnetic Resonance Imaging........................................................ GW
Medical Assistant............................................................................. GW
Medical Assisting................................................................................ PC
Medical Billing and Coding..............................................................GW
Medical Billing and Coding: Physician-Based................................. PC
Medical Coding: Hospital-Based...................................................... PC
Medical Interpreter - Spanish......................................................... GW
Medical Laboratory Sciences............................................................ PC
Medical Radiography....................................................................... GW
Musculoskeletal Sonography..........................................................GW
Nuclear Medicine Technology........................................................ GW
Nurse Assisting......................................................GW, MC, PC, PV, EM
Nursing.............................................. CG, EM, GC, GW, MC, PC, PV, SC
Nursing Refresher.....................................................................GW, MC
Occupational Therapy Assistant.....................................................GW
Ophthalmic Medical Assistant........................................................ GW
Operating Room Nursing.................................................................GW
Pharmacy Technician...................................................................... GW
Phlebotomy.........................................................................GW, PC, SM
Physical Therapist Assisting............................................................ GW
Polysomnographic Technology...................................................... GW
Practical Nursing.............................. CG, GC, GW, MC, PV, SC, RS, EM
Recovery Support.............................................................................. SM
Respiratory Care.............................................................................. GW
Speech Language Pathology Assistant........................................... EM
Surgical Technology......................................................................... GW


ADMISSIONS, REGISTRATION AND RECORDS

LOCATION & TELEPHONE:
Washington Campus: Integrated Education Building, Room IE1214 (Near Enrollment Services) // (602) 286-8200
Central City // A-Building, Room Portal 1, access from center courtyard // (602) 238-4350
Deer Valley // Room 134-135 // (602) 392-5000
SouthWest Skill Center // (623) 535-2700
WEBSITE: WWW.GATEWAYCC.EDU/DIRECTORY/ADMISSIONS-RECORDS
EMAIL: enroll@gatewaycc.edu

The Admissions, Registration and Records Department performs the following functions: processes the Student Admission Application; determines residency for tuition payment purposes; registers students in classes; maintains student records; processes transcript requests and enrollment verifications; and administers selective admissions. This office is also responsible for monitoring FERPA, complying with parts of the Solomon Amendment, and verifying citizenship and residency for tuition purposes. In addition, this office processes all transcript evaluations, graduation reviews, and checkouts.

ADVISING

LOCATION:
Washington Campus // Integrated Education Building, Room IE1214 (Near Enrollment Services and Center for Health Careers Education building) // (602) 286-8200
Central City // B-Building/Room B-405 // (602) 238-4350
Deer Valley // (602) 392-5000
SouthWest Skill // (623) 535-2700
WEBSITE: WWW.GATEWAYCC.EDU/ADVISEMENT
EMAIL: advisor@gatewaycc.edu

Academic Advising provides students with guidance in identifying and developing suitable programs of study, encourages persistence, and helps identify and assess alternatives and consequences of those decisions by helping students:

- Clarify educational and career goals
- Develop decision-making skills
- Develop educational plans
- Explain college requirements
- Increase student awareness of educational resources available
- Interpret individual assessment information
- Select appropriate courses
- Transfer to or from another institution
- Understand the college environment

ASSESSMENT/TESTING CENTERS

LOCATION & TELEPHONE:
Washington Campus // Integrated Education Building, Room IE1252 (Near Enrollment Services) // (602) 286-8160
Central City // B-Building/Room B-410 // (602) 238-4316
Deer Valley // (602) 395-5276
SouthWest Skill // WEBSITE: WWW.GATEWAYCC.EDU/TESTING
EMAIL: testing@gatewaycc.edu

At the Washington Campus, the Assessment/Testing Center staff administers English, Reading and Mathematical assessment placement tests, CELSA (English as a second language), GED, HESI A2, HESI PN, credit by exam for health curriculum courses, high stakes testing for Kryterion and NIMS, and individual student make-up exams (per instructor request). Testing Center authorized to test for Pearson Vue.

At the Central City, Deer Valley, and SouthWest Skill Center locations, the Assessment/Testing staff administer competency-based tests for the Trade and Technical Training programs.

ATHLETICS

LOCATION: Washington Campus // Main Building, Room MA1370
TELEPHONE: (602) 286-8142
WEBSITE: WWW.GATEWAYCC.EDU/ATHLETICS
EMAIL: athletics@gatewaycc.edu

The Athletic Department provides student-athletes the guidance and resources to pursue their academic and athletic goals. Through the support and direction of their coaches, student-athletes are encouraged to excel in both the classroom and on their respective playing fields. Combining academics and athletics provides student-athletes the opportunity to participate in athletics beyond high school.

Additionally, student-athletes will be given the opportunity to develop leadership and life skills, improve their athletic performance, and in most cases, supplement funding of their college education. GateWay offers the following intercollegiate athletic programs: men's soccer, women's soccer, baseball and softball.
ADMISSIONS, REGISTRATION AND RECORDS

LOCATION & TELEPHONE:
Washington Campus: Integrated Education Building, Room IE1214 (Near Enrollment Services) // (602) 286-8200
Central City // A-Building, Room Portal 1, access from center courtyard // (602) 238-4350
Deer Valley // Room 134-135 // (602) 392-5000
SouthWest Skill Center // (623) 535-2700
WEBSITE: WWW.GATEWAYCC.EDU/DIRECTORY/ADMISSIONS-RECORDS
EMAIL: enroll@gatewaycc.edu

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ADVISING

LOCATION:
Washington Campus // Integrated Education Building, Room IE1214 (Near Enrollment Services and Center for Health Careers Education building) // (602) 286-8200
Central City // B-Building/Room B-405 // (602) 238-4350
Deer Valley // (602) 392-5000
SouthWest Skill // (623) 535-2700
WEBSITE: WWW.GATEWAYCC.EDU/ADVICEMENT
EMAIL: advisor@gatewaycc.edu

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- Develop decision-making skills
- Develop educational plans
- Explain college requirements
- Increase student awareness of educational resources available
- Interpret individual assessment information
- Select appropriate courses
- Transfer to or from another institution
- Understand the college environment

ASSESSMENT/TESTING CENTERS

LOCATION & TELEPHONE:
Washington Campus // Integrated Education Building, Room IE1214 (Near Enrollment Services) // (602) 286-8200
Central City // A-Building/Room A-B103 (Near Enrollment Services) // (602) 238-4350
Deer Valley // (602) 395-5276
SouthWest Skill Center // (623) 535-2700
WEBSITE: WWW.GATEWAYCC.EDU/TESTING
EMAIL: testing@gatewaycc.edu

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TELEPHONE: (602) 286-8142
WEBSITE: WWW.GATEWAYCC.EDU/ATHLETICS
EMAIL: athletics@gatewaycc.edu

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Additionally, student-athletes will be given the opportunity to develop leadership and life skills, improve their athletic performance, and in most cases, supplement funding of their college education. GateWay offers the following intercollegiate athletic programs: men's soccer, women's soccer, baseball and softball.
Textbooks (purchase, rental, and digital), supplemental reading material, apparel, gifts, and supplies are available at the bookstore for all classes.

Refunds
No refunds or exchanges will be made on books or supplies without a current cash register receipt. Refunds or exchanges will be made for a one-week period after the first day of classes for fall, spring, and summer semesters. Starting the second week of classes, the bookstore will resume its two-day refund policy.

Rent-a-Text
GateWay participates in the Follett book rental program. Students may rent new or used textbooks for significant up-front savings. For rental details, stop by the campus bookstore or visit: WWW.RENT-A-TEXT.COM

The Career Centers are open to students, alumni, and community jobseekers who are deciding on a career, looking for work or both. The Career Centers offer individualized assistance in the following areas:

- Career Planning and Assessment
- Determination of a Major
- Job Search Resources/Interview Preparation
- Resume Development

Students and jobseekers also may benefit from access to job postings and tips to navigate an Internet-based job search. Other services include on-campus employer recruitment and job fairs, and access to Federal Work Study positions for those who qualify. All students are encouraged to visit the Career Center during their first semester at GateWay to start building their professional portfolio. All services are open to the public and free of charge.

Under the Federal Work Study (FWS) program, qualified students are awarded federal funding in order to work at GateWay on a part-time basis while pursuing their education. Other jobs are available for student workers as well. All students are encouraged to drop by the Career Center to take advantage of all these services.
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CAREER CENTER
LOCATION & TELEPHONE:
Washington Campus // Integrated Education Building, Room IE1234 // (602) 286-4500
Central City // B Building, Room B422 // (602) 238-4380
Deer Valley // Room 120 // (602) 238-4380
SouthWest Skill Center // Room 103 // (602) 238-4380
WEBSITE: WWW.GATEWAYCC.EDU/CAREER-CENTER
EMAIL: careercenter@gatewaycc.edu

The Career Centers are open to students, alumni, and community jobseekers who are deciding on a career, looking for work or both. The Career Centers offer individualized assistance in the following areas:

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GateWay is committed to providing students and employees with financial and cashiering services. Some examples of student services provided are the following:

- Account Inquiries
- Child Care Payments
- Financial Aid Refund
- Monthly Payment Plan
- Payroll Check Disbursement
- Third-party Payment Coordination
- Tuition and Fee Refunds
- Tuition Payment Processing

Method of Payment
Students can pay by cash, check, VISA, DISCOVER CARD, MASTERCARD, or AMERICAN EXPRESS. Payment by check will require proper I.D. An example is a bank guarantee card and an AZ Driver’s License. Payment by credit card can be made by calling (602) 286-8277. Payment also can be made online at My.maricopa.edu.

Payment Due Dates
CREDIT: In accordance with the Arizona Community College Board adopted Tuition and Fees Schedule, all tuition, fees, assessments and deposits must be paid in full at the time of registration and/or by the due date indicated on your online student account accessible via My.maricopa.edu. No student is properly enrolled unless he/she has completed this requirement.

CLOCK PROGRAMS: Payment deadline for all clock programs will be the Friday (Thursday during summer hours) two weeks prior to the start date of each program. Students must have funding secured prior to the start date for the full amount of the estimated program cost. If you are receiving some form of financial assistance, it is your responsibility to have your tuition and fees paid by your due date to prevent being withdrawn for non-payment of tuition and fees.

Refund Policy for Program Fees
Program fees (material, kits, etc. not included in course fees) will be refunded if the student officially withdraws prior to the program start date.

Returned Checks
A fee of $15 will be charged for each returned check.

Third Party Payments
All third party payments must be coordinated through the cashier’s office. In the case of a third party vendor retracting or denying payment, the debt will be applied to the student’s account and will be their responsibility.
The GateWay Community College Center for Student Life/Leadership makes the educational program a rich, exciting, and enjoyable experience.

The office is designed to provide a full schedule of traditional and special events, student leadership workshops, cultural programs, student organization activities, publications, volunteer program, and a variety of free services. The office is designed for all students at GateWay Community College.

One of the prime responsibilities of the Center for Student Life/Leadership is to develop, implement and evaluate educational, cultural and social programs which reflect the needs of a diverse student population; it teaches and trains students to implement and evaluate the same. The center also challenges awareness and encourages students to experience another dimension of student life based on responsibility and commitment.

Advisors to Student Organizations
Every GWCC student organization MUST have an advisor. Club advisors shall be employees of the Maricopa Community College District. In order to conduct official business, advisors MUST attend all meetings.

Associated Students
Every student who is taking a class and has paid the registration fee is a member of the Associated Students of GateWay Community College (ASGWCC).

InterClub Council Membership
The membership of the InterClub Council will include the SAM Executive council and one student representative from each college-recognized student organization.

Posting Policy
In an effort to preserve our walls and the beauty of our buildings, the following posting regulations are in effect:

- Posting is limited to the inside of the buildings.
- Posting on all walls is strictly prohibited.
- Post information on bulletin boards only.
- All posted information must bear the name of the sponsoring organization and display the Student Life stamp.
- You may have your information stamped in the Center for Student Life, located in Room MA1132 of the Main Building.

When posting materials, keep the following in mind:

- Do not post your material over someone else’s information.
- Do not remove or discard any information other than your own.
- The Center for Student Life/Leadership will remove all posted bulletin board information after two weeks of display or the day following the date of the scheduled event. Please adhere to the information above or your material will be removed and taken to the Center for Student Life.
- Use thumb tacks; no staples please.

Special Events/Activities
Throughout the year at GateWay Community College, the Center for Student Life/Leadership provides special events and activities for the students. Those activities and events include but are not limited to: Pizza with the President, Volunteer projects, multicultural celebrations, blood drives, Commencement, and the Honors and Awards Banquet. The events the SAM Council plans for the students include: Welcome Back Activities, Spring Geckoland, Alcohol Awareness Week, Sexual Assault Awareness and Holiday Buffet.
In an effort to preserve our walls and the beauty of our buildings, the following posting regulations are in effect:

The membership of the InterClub Council will include the SAM Executive council and one student representative from InterClub Council Membership

Community College (ASGWCC).

Every student who is taking a class and has paid the registration fee is a member of the Associated Students of GateWay College District. In order to conduct official business, advisors MUST attend all meetings.

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Student Activities Management (SAM) Council

The Student Activities Management (SAM) Council serves as a communication link between students and the administration, voicing concerns and ideas relative to student success. The SAM Council is the governing body of the Associated Students of GateWay Community College (ASGWCC). The purpose of this organization includes:

• Enhancing communication and cooperation among all segments of the college community
• Increasing student involvement in all appropriate facets of college operations
• Promoting other activities which enhance the academic, social, and cultural growth of students

Student Leadership Programs

In the Center for Student Life/Leadership, leadership programs are provided throughout the year. There is a retreat held in the summer for all new officers and the department staff. During the fall semester a student organizational workshop is held in which all officers and advisors are urged to attend; a district wide Student Leadership Retreat is provided for all MCCCD student leaders. During the academic year, regional, national, and local student leadership conferences, seminars and workshops are available to keep the student leaders abreast of new programs, services and changes.

Student Organizations

There are many student organizations that are available at GateWay and are associated with a particular career field. GateWay also has several cultural clubs available for those interested students. GWCC student organizations are as follows:

• Anime Club
• Associated Students in Surgical Technology (ASSIST)
• Association of Respiratory Care Students (ARCS)
• Black Student Union (BSU)
• Club Inspiring and Nurturing Students in Total Education (INSITE)
• Club Nuc Med
• Creative Writing Club/Out of Ink
• Gay Straight Alliance (GSA)
• Geckos In Action - Community Builders (GIA)
• Go Green GateWay
• Hispanic Student Organization (HSO)
• Information Technology Student Alliance
• Inter-Tribal Club
• Male Empowerment Network (MEN)
• Math Club
• Music Club
• Muslim Student Association
• Parents Learning About Youth (P.L.A.Y.)
• Phi Theta Kappa - Alpha Alpha Epsilon Chapter
• Safety Club
• Skills USA
• Stand in Truth Christian Club
• Student Activities Management Council
• Student Association of Radiologic Technologists (START)
• Student Association of Sonographers (SAS)
• Student Nurses Association (SNA)
• Students with the Ability to Learn Succeed and Achieve (SALSA)
• Veterans Club
• Water and Various Environmental Sciences Association (WAVES)
• Women Rising
• World Explorers Club

Chartered student organizations are a vital part of the educational opportunities offered by GateWay Community College. Through these organizations, students may participate in programs that enhance their occupational training or take part in social activities that reflect special interests including cultural heritage events, community service projects and forums dealing with today’s issues.
Student Representatives on College Committees

Student representatives serve on various campus committees, including the following: Graduation Committee, Honors and Awards Committee, Financial Aid Committee, Strategic Planning Committee, GateWay Community College Tribal, Service-Learning Committee, and GateWay Community College Cultural Diversity Committee. Students are appointed to serve on each committee by the chairperson. Students are asked for input in matters of student affairs, publications, admissions, marketing and public relations, and retention of current students.

CHILDREN’S LEARNING CENTER

LOCATION:
Washington Campus (Located on the north side of the campus)
108 N. 40th St Phoenix, AZ 85034

TELEPHONE:
Washington Campus (602) 286-8130

WEBSITE: www.gatewaycc.edu/childcare

EMAIL: clc@gatewaycc.edu

We are a state licensed, DES authorized Quality First star rated facility. Enrollment is on a first-come, first served basis.

Ages of Children

Children 24 months through 12 years are accepted for enrollment. All children must be able to take care of their own toileting needs.

Requirements

• Current Immunization Records
• Birth Certificate
• Completed Enrollment Forms

After a complete enrollment packet has been received and accepted, children are eligible for drop-in basis if space allows. To insure that space is available you MUST call first to make reservations. Above requirements must be met.

Rates

There is a non-refundable registration fee each semester of $10 per child up to $30 per family.

MCCCD Student Rate:
$12/half day (under 6 hours)
$24/full day (6 hours or more)

MCCCD Faculty Rate:
$14/half day (under 6 hours)
$28/full day (6 hours or more)

Community Rate:
Half Day (under 6 hours): $16 per child/per day
Full Day (6 hours or more): $32 per child/per day

Summer Camp Rates vary: Please visit CLC for information.

COLLEGE POLICE/PARKING

LOCATION:
Washington Campus // Public Safety (PS) Building
Central City // A-Building, Room A113
Desk Deer Valley // Room 151 (Ask at front desk)

TELEPHONE:
Emergencies 24 hours/day: (480) 784-0911
Non-Emergencies: (480) 784-0900

College Police Business Office: (602) 286-8911

WEBSITE: www.gatewaycc.edu/police

EMAIL: safety@gatewaycc.edu

Hours

College Police staff is on-site 24 hours a day, seven days a week at Washington Campus and during operational hours at Central City, Deer Valley & SouthWest Skill Center.

Washington Campus
Office Hours for Parking Permits and Other Requests
Monday - Friday: 6:30 a.m. - 7:00 p.m.
Saturday: 6:30 a.m. - 4:00 p.m.

Central City
Office Hours for Parking Permits and Other Requests
Monday - Thursday: 8:00 a.m. - 8:00 p.m.

The GateWay College Police Department is located in the College Police Building which is in operation 24 hours a day, seven days a week. The telephone number is (602) 286-0911. Students may utilize the on-campus Extension 6-0911. The primary role of the department is to provide assistance and protection of people on campus and the protection of district and personal property.

Areas of Refuge

Areas of refuge for disabled persons are located in the following areas:

• In the Main Building, second floor (southwest side) in the vicinity of Room MA2305
• In the Center for Health Careers Education on the opposite side of Room CH-2035 in the south wing
• In the Center for Health Careers Education, west of Room 2153 in the north wing
• In the Integrated Education Building, second floor (east side) by the elevators near the Learning Center
• In the Integrated Education Building, second floor (west side) in the vicinity of Room IE2214
• In the Integrated Education Building, third floor (east side) by the elevators near the faculty offices
• In the Integrated Education Building, third floor (west side) in the vicinity of Room IE3209
• In the Main Building, second floor (southeast side) in the vicinity of Room MA2111

During evacuations, disabled persons should be assisted to these locations for evacuation by College Police, police or fire personnel.

Assistance with Disabled Motor Vehicles

Reasonable attempts will be made to assist persons are experiencing vehicle problems, such as a dead battery, flat tire or similar issue. Persons experiencing such problems should proceed to the College Police Department. A valid driver's license, proof of vehicle ownership and a college vehicle parking permit are required to receive vehicle assistance. Those individuals receiving assistance for a battery boost will also be required to sign a waiver form in the event that damage occurs as a result of the attempted assistance.

Carpool Parking

Car-pool parking spaces are provided for those student who car-pool to campus. A carpool parking permit is required in addition to the parking permit to park in a car-pool parking space. The carpool parking permit is issued free of charge. The carpool parking permit may be obtained from the College Police office.
Student Services 2019-2020

Student Representatives on College Committees
Student representatives serve on various campus committees, including the following: Graduation Committee, Honors and Awards Committee, Financial Aid Committee, Strategic Planning Committee, GateWay Community College Tribunal, Service-Learning Committee, and GateWay Community College Cultural Diversity Committee. Students are appointed to serve on each committee by the chairperson. Students are asked for input in matters of student affairs, publications, admissions, marketing and public relations, and retention of current students.

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108 N. 40th St Phoenix, AZ 85034
TELEPHONE:
Washington Campus (602) 286-8130
WEBSITE: WWW.GATEWAYCC.EDU/CHILDCARE
EMAIL: clc@gatewaycc.edu

We are a state licensed, DES authorized Quality First star rated facility. Enrollment is on a first-come, first served basis.

Ages of Children
Children 24 months through 12 years are accepted for enrollment. All children must be able to take care of their own toileting needs.

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Hours
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Emergency Evacuations
Whenever the evacuation alarm or fire alarm sounds or you are verbally informed to evacuate:

- Remain calm.
- Do not call the College Police Department to ascertain if the alarm is false or not. The phone lines will be needed to contact assisting agencies.
- Leave the building through the closest exit.

While leaving:

- Assist disabled persons or others requiring assistance
- Shut all doors behind you as you go. Closed doors tend to slow the spread of fire, smoke and water
- Proceed quickly, but in an orderly manner. Hold onto handrails while on the stairway
- Do not use elevators
- Follow the instructions of instructors and staff

Once outside, proceed to the designated assembly area. Follow the instructions of emergency personnel at the scene.

Lost and Found Property
The College Police Department maintains a lost and found section. Anyone who loses property on campus may check with College Police to determine if an item has been found. Found items brought to the College Police Department will be held for 30 days. Items not claimed within this period of time will be disposed of in accordance to established procedures.

Parking
- Vehicles parked in a parking space which displays a disabled parking sign, a painted disabled insignia, or both, must display a current disabled parking permit issued by the state of Arizona.
- Red curbs are no-parking zones. Parking in red zones, entrances to buildings, driveways, in front of garbage dumpsters, barricades, fire lanes and fire hydrants is prohibited.
- Driving into or parking in an area not designated for use or closed by the use of barricades, chains, or other vehicle control devices is prohibited.
- Parking on or blocking pedestrian paths, sidewalks, crosswalks, striped safety zones, and bicycle paths are prohibited.
- Vehicles which bear a valid college parking permit may not park in spaces designated for visitor parking.

Students who violate the Traffic and Parking Regulations may be fined and/or disciplined in accordance to the guidelines established by the MCCCD Governing Board.

Examples of the scheduled fines are as follows:

- Displaying an altered or substituted permit ....................................................... $50
- Failure to register a vehicle and display a parking permit ............................... $30
- Falsifying information on registration application ............................................ $50
- Improperly displaying a parking permit ......................................................... $15
- Obstructing a properly parked/moving vehicle ................................................ $15
- Parking beyond posted time limit ................................................................. $15
- Parking by a college employee or student in a visitor area ............................ $15
- Parking in a Fire Lane ................................................................................... $50
- Parking in an unauthorized parking area....................................................... $25
- Parking on or blocking a pedestrian path .................................................... $15
- Parking outside stall lines ............................................................................ $15
- Removing barricade or failure to obey vehicle control device ..................... $15
- Violating disabled parking stall or access ..................................................... $50

(All fines are doubled if not paid within 15 working days)

Emergency Evacuations
- Follow the instructions of emergency personnel at the scene.
- Do not call the College Police Department to ascertain if the alarm is false or not. The phone lines will be needed to contact assisting agencies.
- Proceed quickly, but in an orderly manner. Hold onto handrails while on the stairway
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- Leave the building through the closest exit.

While leaving:

- Assist disabled persons or others requiring assistance
- Shut all doors behind you as you go. Closed doors tend to slow the spread of fire, smoke and water
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Once outside, proceed to the designated assembly area. Follow the instructions of emergency personnel at the scene.

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- Driving into or parking in an area not designated for use or closed by the use of barricades, chains, or other vehicle control devices is prohibited.
- Parking on or blocking pedestrian paths, sidewalks, crosswalks, striped safety zones, and bicycle paths are prohibited.
- Vehicles which bear a valid college parking permit may not park in spaces designated for visitor parking.

Students who violate the Traffic and Parking Regulations may be fined and/or disciplined in accordance to the guidelines established by the MCCCDD Governing Board.

Examples of the scheduled fines are as follows:

- Displaying an altered or substituted permit ....................................................................................... $50
- Failure to register a vehicle and display a parking permit ................................................................. $30
- Falsifying information on registration application .................................................................................. $50
- Improperly displaying a parking permit .............................................................................................. $15
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- Parking in an unauthorized parking area .............................................................................................. $25
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- Removing barricade or failure to obey vehicle control device ............................................................ $15
- Violating disabled parking stall or access ............................................................................................ $50

(Student Services 2019-2020)

Student Services 2019-2020

Vehicle Traffic and Parking Regulations
- All accidents involving vehicles which occur on college property should be reported to the College Police Department
- All Arizona state laws governing the movement and operation of motor vehicles have been adopted by the MCCCDD Governing Board for control of vehicles on college property
- Driving motor vehicles, motorized cycles, and bicycles on pedestrian paths and sidewalks is prohibited
- The maximum speed limit in all college parking lots is 15 mph

Reporting Crimes and Emergencies
Students, faculty and staff are encouraged to report all criminal activity and emergencies that occur on campus. A report may be filed through a College Police officer, in person, by phone or through email at SAFETY@GATEWAYCC.EDU.

In case of emergency, individuals may utilize (480) 784-0911 or 9-1-1 if exceptional circumstances exist. Reports of a non-emergency nature may be reported via the phone or made in person at the College Police Office.

Emergency Evacuations
- The maximum speed limit in all college parking lots is 15 mph
- Do not use elevators
- Proceed quickly, but in an orderly manner. Hold onto handrails while on the stairway
- Do not use elevators
- Follow the instructions of instructors and staff

Once outside, proceed to the designated assembly area. Follow the instructions of emergency personnel at the scene.

Lost and Found Property
The College Police Department maintains a lost and found section. Anyone who loses property on campus may check with College Police to determine if an item has been found. Found items brought to the College Police Department will be held for 30 days. Items not claimed within this period of time will be disposed of in accordance to established procedures.

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- Parking on or blocking pedestrian paths, sidewalks, crosswalks, striped safety zones, and bicycle paths are prohibited.
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(Student Services 2019-2020)

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- All accidents involving vehicles which occur on college property should be reported to the College Police Department
- All Arizona state laws governing the movement and operation of motor vehicles have been adopted by the MCCCDD Governing Board for control of vehicles on college property
- Driving motor vehicles, motorized cycles, and bicycles on pedestrian paths and sidewalks is prohibited
- The maximum speed limit in all college parking lots is 15 mph
The following assessments are available through the Counseling Department:

**Assessments**

- **Self-Directed Search**
  - A widely used instrument based on C.G. Jung's (1921-1971) ideas about perceptions and judgment. The effects of each preference, alone, and in combination, can be put to practical use. The inventory is very useful in making important personal and career decisions. Knowing your preferences and learning about other people's preferences can help you understand where your strengths are, what kind of work you might enjoy, and how people with different preferences can relate to each other and be valuable to society.

- **MBTI**
  - A widely used instrument based on C.G. Jung's (1921-1971) ideas about perceptions and judgment. The effects of each preference, alone, and in combination, can be put to practical use. The inventory is very useful in making important personal and career decisions. Knowing your preferences and learning about other people's preferences can help you understand where your strengths are, what kind of work you might enjoy, and how people with different preferences can relate to each other and be valuable to society.

**Counseling Department**

- **Occupational Finder**
  - An easy-to-use, self-administered test to help you find the occupations that best suit your interests and skills. Knowing your preferences and learning about other people's preferences can help you understand where your strengths are, what kind of work you might enjoy, and how people with different preferences can relate to each other and be valuable to society.

**Reasons for Counseling**

- Adjusting to a college setting
- Coping with crisis
- Dealing with loss
- Eliminating self-defeating behavior
- Improving self-esteem
- Making personal, educational, and career choices
- Managing time
- Reducing stress
- Setting goals
- Taking control of one's life: improving life skills
- Test anxiety reduction

The mission of the Counseling Department is to address students' personal, academic, and career needs that impact the learning process. Counselors are committed to serving the GatewayWay with responsive educational and counseling services in order to improve student retention, academic services, and quality of life.

Students can also access services which include educational planning, career counseling, career, and personal assessment tools, and personal counseling. Counseling can also link students with resources both on and off campus to help students reach their potential. Furthermore, Counseling and Personal Development (CPD) courses are offered each semester with a variety of specific themes designed to help students develop effective life skills.

Course descriptions for Counseling and Personal Development (CPD) classes are listed in the class schedule and GatewayWay Catalog and Student Handbook.

**Our Responsibility**

It is the counselor's job to make students aware of possible alternative solutions to various situations, encouraging responsibility in taking actions. Services including individual change through counseling, consultation, coordination, and classroom instruction.

Counselors collaborate with other staff to help students reach their potential. Consulting with other professionals brings expertise to help staff, students, and faculty find positive solutions.
The following assessments are available through the Counseling Department:

**Assessments**

- Self-Directed Search
- Myers-Briggs Type Indicator (MBTI)
- Test anxiety reduction
- Taking control of one's life: improving life skills
- Test anxiety reduction
- The possession or use of firearms, edged weapons, or other dangerous weapons is strictly forbidden on campus. All weapons, regardless of type, are prohibited by the MCCCD and/or state and local law. In accordance with state law and MCCCD policy, weapons may be left in a vehicle provided the weapon is out of sight and the vehicle is secured.

**Copy/Mail Center - Pacific Office Automation (POA)**

- **Location & Telephone:**
  - Washington Campus // Main Building, Room MA1210 // (602) 286-8313
  - Central City // B Building, Room BO08 // (602) 238-4384
  - Deer Valley // SouthWest Skills Center // (602) 238-4384

- **For Service:** Submit a GWCC Help Desk Ticket
- **For Supplies:** Supplies95@pacificoffice.com

Fee-based student services include: black and white and color copying, binding, laminating, transparencies, and other specialty work upon request. Please stop by the Copy/Mail Center or call for current price information. The Copy Center accepts cash only.

**Student Services 2019-2020**

**Counseling**

- **Location:**
  - Washington Campus // Main Building, Room MA1300
  - Central City // B Building, Room B410
  - Deer Valley // Room 144
  - All locations by appointment.

- **Telephone:** (602) 286-8900

- **Website:** www.gatewaycc.edu/counseling

- **Email:** counseling@gatewaycc.edu

In the event of an emergency, dial 9-1-1 or the College Police at (480) 784-0911. The goal of a counselor is to promote the development of effective and adaptive behavior in people. The counseling process enables personal growth and may be carried over into many aspects of life.

Counseling services are available on campus, providing a unique and confidential relationship between a professional and student in need of help. Student counseling services are free. Please note, counselors do not provide clinical work/treatment of disorders. However, counselors may provide community resources/contacts.

**About Our Counselors**

The counselors at GateWay are professionals who have been trained to provide counseling services to those in need. In order to be a counselor in the Maricopa Community Colleges, a counselor must have a minimum of a Master's degree or higher, majoring in counseling and other similar criterion.

**Assessments**

The following assessments are available through the Counseling Department:

- **Self-Directed Search**
- **Myers-Briggs Type Indicator (MBTI)**
- **Test anxiety reduction**
- **Taking control of one's life: improving life skills**
- **Valley Metro Public Transportation**
- **B-1-1 Arizona**
- **Bus planner and public transportation information to get to where you need to go**
- **Mental Health Net**
- **Reducing stress**
- **Setting goals**
- **Tackling control of one's life: improving life skills**
- **Test anxiety reduction**

The mission of the Counseling Department is to address students' personal, academic, and career needs that impact the learning process. Counselors are committed to serving the GateWay Community with responsive educational and counseling services in order to improve student retention, academic services and quality of life.

Students can also access services which include educational planning, career counseling, career and personal assessment tools, and personal counseling. Counseling can also link students with resources both on and off campus to help students reach their potential. Furthermore, Counseling and Personal Development (CPD) courses are offered each semester with a variety of specific themes designed to help students develop effective life skills.

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Counselors collaborate with other staff to help students reach their potential. Consulting with other professionals brings expertise to help staff, students and faculty find positive solutions.

**Resources**

The following list of online resources has been compiled in order to assist with various counseling needs:

- 2-1-1 Arizona
- Bus planner and public transportation information to get to where you need to go
- Mental Health Net
- Valley Metro Public Transportation

**Reasons for Counseling**

Students seek counseling for a variety of reasons, including:

- Adjusting to a college setting
- Coping with crisis
- Dealing with loss
- Eliminating self-defeating behavior
- Improving self-esteem
- Making personal, educational and career choices
- Managing time
- Reducing stress
- Setting goals
- Taking control of one's life: improving life skills
- Test anxiety reduction

Questions?

If you need more information about safety at GateWay Community College, please contact the College Police Department at (602) 286-8911. College Police personnel will address your questions and concerns in a prompt and courteous manner.

**Copying/Mailing Services**

- 26 27

**Counseling**

- **Location:**
  - Deer Valley // Room 144
  - Central City // Building, Room B410
  - Washington Campus // Building, Room MA1300

- **Telephone:** (602) 286-8900

- **Website:** www.gatewaycc.edu/counseling

- **Email:** counseling@gatewaycc.edu

- **Copy/Mail Center - Pacific Office Automation (POA)**
  - Location:
    - Washington Campus // Main Building, Room MA1210 // (602) 286-8313
    - Central City // B Building, Room BO08 // (602) 238-4384
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  - Washington Campus // Main Building, Room MA1300
  - Central City // B Building, Room B410
  - Deer Valley // Room 144
  - All locations by appointment.

- **Telephone:** (602) 286-8900

- **Website:** www.gatewaycc.edu/counseling

- **Email:** counseling@gatewaycc.edu

In the event of an emergency, dial 9-1-1 or the College Police at (480) 784-0911. The goal of a counselor is to promote the development of effective and adaptive behavior in people. The counseling process enables personal growth and may be carried over into many aspects of life.

Counseling services are available on campus, providing a unique and confidential relationship between a professional and student in need of help. Student counseling services are free. Please note, counselors do not provide clinical work/treatment of disorders. However, counselors may provide community resources/contacts.

**Assessments**

The following assessments are available through the Counseling Department:

- **Self-Directed Search**
- **Myers-Briggs Type Indicator (MBTI)**
- **Test anxiety reduction**
- **Taking control of one's life: improving life skills**
- **Valley Metro Public Transportation**
- **B-1-1 Arizona**
- **Bus planner and public transportation information to get to where you need to go**
- **Mental Health Net**
- **Reducing stress**
- **Setting goals**
- **Tackling control of one's life: improving life skills**
- **Test anxiety reduction**

The mission of the Counseling Department is to address students’ personal, academic, and career needs that impact the learning process. Counselors are committed to serving the GateWay Community with responsive educational and counseling services in order to improve student retention, academic services and quality of life.

Students can also access services which include educational planning, career counseling, career and personal assessment tools, and personal counseling. Counseling can also link students with resources both on and off campus to help students reach their potential. Furthermore, Counseling and Personal Development (CPD) courses are offered each semester with a variety of specific themes designed to help students develop effective life skills.

Course descriptions for Counseling and Personal Development (CPD) classes are listed in the class schedule and GateWay Catalog and Student Handbook.

**Our Responsibility**

It is the counselor's job to make students aware of possible alternative solutions to various situations, encouraging responsibility in taking actions. Services including individual change through counseling, consultation, coordination and classroom instruction.

Counselors collaborate with other staff to help students reach their potential. Consulting with other professionals brings expertise to help staff, students and faculty find positive solutions.
Career Counseling
This service enables students to understand their values, interests, skills and experiences in choosing a career path. The career planning process involves matching students to the compatibility of lifestyle and work demands, and assessing personality strengths and skills. Some assessments can be found in the Counseling Department while others are accessible in the Career Center. Please check with a counselor to see what your needs are for the best fit.

Career and Personality Assessment
We provide counseling tools that include career inventories and personality assessments to assist students in making career choices that are compatible with their interests, personality traits, work values and abilities. Please check with a counselor to see what your needs are and which assessments are best for you.

Personal Counseling
Individual counseling is private, confidential and free of charge. Assistance in resolving a crisis or personal issue, which may be interfering with educational success, is offered through counseling. This may include a referral process to a community agency if brief counseling sessions cannot resolve the issues. Counseling is voluntary and students may select the counselor of their choice.

Crisis Counseling
Crisis intervention is available Monday - Friday (Monday - Thursday during the summer on a limited basis). Students may walk in and self refer, or a faculty or staff member may refer a student to counseling during a crisis. All counseling information is private and confidential, and may not be released without a signed release of information form by the student.

Contact the Counseling Department for additional assistance or to schedule an appointment.

DISABILITY RESOURCES AND SERVICES

LOCATION:
Washington Campus // Integrated Education Building, Room IE1202
Central City // B Building, Room B410
Deer Valley // Room 148
SouthWest Skill Center // Room 120

TELEPHONE: (602) 286-8171 (call for hours at each location)

WEBSITE: WWW.GATEWAYCC.EDU/DISABILITY-RESOURCES
EMAIL: disability.services@gatewaycc.edu

The Disability Resources & Services Office provides confidential, consultative and collaborative academic support to students with documented physical or mental conditions. DRS is responsible for determining the eligibility, and provision of, reasonable academic adjustments, modifications, and auxiliary aids for students with disabilities under the ADAA and Section 504 of the Rehabilitation Act.

Eligibility for accommodations and required documentation is located at the following link: https://district.maricopa.edu/regulations/admin-regs/section-2/2-8 or visit Maricopa.edu and search for "required documentation. Then click "2.8 Students with Disabilities."

ENROLLMENT SERVICES

The Department of Enrollment Services at GateWay Community College strives to provide effective and reliable service in support of the academic mission of this institution. Enrollment Services staff facilitates and supports student admission, enrollment, retention and graduation.

LOCATION & TELEPHONE:
Washington Campus (WA)
Location: Integrated Education Building, Room IE1214

FINANCIAL AID

LOCATION & TELEPHONE:
Washington Campus // Integrated Education Building, Room IE1214 (Near Enrollment Services) // (855) 622-2332
Central City // A Building, Room Portal 1 (access from center courtyard) // Rooms 134-135 // (855) 622-2332
Deer Valley // (855) 622-2332
SouthWest Skill Center // (855) 622-2332

WEBSITE: WWW.GATEWAYCC.EDU/FINANCIAL-AID
EMAIL: finaid@gatewaycc.edu

Financial assistance is available to eligible GateWay Community College students in the form of grants, scholarships, employment, tuition payment plans or federal loans. Students may receive assistance from only one funding source or aid may be offered in a package from multiple sources. The student award depends on eligibility, level of need, packaging policy, and availability of funds.

Under federal regulations, students have the primary responsibility for funding their education. For dependent students, their parents share that responsibility. All student awards are based on “need” after consideration of student and (where required) parental contribution. Refer to the Free Application for Federal Student Aid (FAFSA) for the federal definition of dependency.

Eligibility
Students must meet ALL of the following requirements to be eligible for federal student aid: be a US citizen or eligible...
Student Services 2019-2020

Career Counseling
This service enables students to understand their values, interests, skills and experiences in choosing a career path. The career planning process involves matching students to the compatibility of lifestyle and work demands, and assessing personality strengths and skills. Some assessments can be found in the Counseling Department while others are accessible in the Career Center. Please check with a counselor to see what your needs are for the best fit.

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Contact the Counseling Department for additional assistance or to schedule an appointment.

DISABILITY RESOURCES AND SERVICES

LOCATION:
Washington Campus // Integrated Education Building, Room IE1202
Central City // B Building, Room B410
Deer Valley // Room 148
SouthWest Skill Center // Room 120

TELEPHONE: (602) 286-8171 (call for hours at each location)
WEBSITE: WWW.GATEWAYCC.EDU/DISABILITY-RESOURCES
EMAIL: disability.services@gatewaycc.edu

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Eligibility for accommodations and required documentation is located at the following link:
https://district.maricopa.edu/regulations/admin-regs/section-2/2-8 or visit Maricopa.edu and search for "required documentation. Then click "2.8 Students with Disabilities."

ENROLLMENT SERVICES

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LOCATION & TELEPHONE:
Washington Campus (WA)
Location: Integrated Education Building, Room IE1214

Student Services 2019-2020

Nursing & Health Program advisors are located in the Center for Health Careers Education
Telephone: (602) 286-8200
Website: WWW.GATEWAYCC.EDU/ENROLLMENT
Email: enroll@gatewaycc.edu

Central City (CC)
Location: A-Building, Room Portal 1 (access from center courtyard)
Telephone: (602) 238-4350
Website: WWW.GATEWAYCC.EDU/ENROLLMENT
Email: enroll@gatewaycc.edu

Deer Valley (DV)
Location: Room 34
Telephone: (602) 392-5000
Website: WWW.GATEWAYCC.EDU/ENROLLMENT
Email: enroll@gatewaycc.edu

SouthWest Skill Center (SWSC)
Location: 3000 N. Dysart Road, Avondale, AZ 85392
Telephone: (623) 535-2700
Website: WWW.GATEWAYCC.EDU/ENROLLMENT
Email: enroll@gatewaycc.edu

Enrollment Services is designed to serve the needs of students by providing a one-stop service center for admissions, registration, records, financial aid, cashiering, and advisement. Enrollment Service assists with a variety of registration and enrollment services and provides computer access for self-service and on-site assistance.

Student ID Cards
Student identification cards are available at Enrollment Services. A picture ID is required before a student ID is issued. The first ID is free; replacement cost is $5. The following is the policy for obtaining an official GateWay student ID:
Student ID’s will only be issued prior to the start of a program or the semester in which the student is registered if payment of tuition and fees or financial aid/deferment is in place.

FINANCIAL AID

LOCATION & TELEPHONE:
Washington Campus // Integrated Education Building, Room IE1214 (Near Enrollment Services) // (855) 622-2332
Central City // A-Building, Room Portal 1 (access from center courtyard) // Rooms 134-135 // (855) 622-2332
Deer Valley // (855) 622-2332
SouthWest Skill Center // (855) 622-2332
WEBSITE: WWW.GATEWAYCC.EDU/FINANCIAL-AID
EMAIL: finaid@gatewaycc.edu

Financial assistance is available to eligible GateWay Community College students in the form of grants, scholarships, employment, tuition payment plans or federal loans. Students may receive assistance from only one funding source or aid may be offered in a package from multiple sources. The student award depends on eligibility, level of need, packaging policy, and availability of funds.

Under federal regulations, students have the primary responsibility for funding their education. For dependent students, their parents share that responsibility. All student awards are based on “need” after consideration of student and (where required) parental contribution. Refer to the Free Application for Federal Student Aid (FAFSA) for the federal definition of dependency.

Eligibility
Students must meet ALL of the following requirements to be eligible for federal student aid: be a US citizen or eligible
non-citizen; be admitted as a regular student in an eligible program and enrolled in classes that pertain to that program only; make satisfactory academic progress; have a high school diploma or GED; apply by completing the Free Application for Federal Student Aid (FASFA) using the student's legal name and valid Social Security Number; show financial "need" per federal regulation (for need-based aid, such as grants and work study); be registered with Selective Service, if required to do so; not be concurrently enrolled in high school; not be in default on any Title IV student loan or owe repayment on any Title IV student grant; not be convicted of certain drug trafficking or possession laws; must provide all documentation requested; and must use any funds received for educational purposes only. There are limits to the amount of grants and loans a student can receive in a year and in their lifetime. Federal student aid can never be received from more than one institution at a time.

Students are required to be enrolled and attending credit hours before financial aid funds (Title IV) can be disbursed. Disbursement of aid will occur when the disbursement process begins for the semester/payment period or shortly after the start of the first class, whichever comes later. Students awarded a loan for one semester/payment period will receive their loan disbursements in two separate, but even amounts, with the second disbursement coming no sooner than half-way through the semester. In order to receive the second disbursement, the student must be in good academic status, currently attending, enrolled in a minimum of six (6) credit hours, and has no less than six (6) viable hours (viable hours are hours that have not been withdrawn or dropped from, and or graded with a failed grade of F, Z, or Y). If the student's level of enrollment is reduced after financial aid has been disbursed, the award must be recalculated and the student may owe a repayment.

How to Apply
Students are encouraged to apply early. Priority consideration for limited financial aid funds may be given to those completing the application process in full prior to April 1. Continuing students must reapply for each academic year. Students enrolling for the first time during spring or summer should apply as early as possible prior to the beginning of the semester/payment period they plan to attend.

Students requesting financial assistance may begin the application process by completing the Free Application for Federal Student Aid (FASFA). To expedite processing for attendance in a credit hour program, designate Gateway Community College (code 008303) in step six (6), for attendance in a clock hour program, designate Gateway Community College Skill Center (code 00701). Students apply electronically at WWW.FASFA.ED.GOV. Students who need help applying can receive assistance with their federal aid application in the Enrollment Service area at any of the Gateway Community College sites.

After submitting the FASFA to the processor, students will receive a Student Aid Report (SAR). If the codes for Gateway Community College (008303 or 00701) are entered on the FASFA, we will also receive the results electronically. After the application is submitted online, students must monitor their Maricopa.edu account and their Maricopa Gmail account frequently as additional documents may be required to complete their application or resolve any inconsistencies that may arise. Student financial aid applications cannot be reviewed until all requested documents have been received. Review of documents originally submitted sometimes triggers the need for additional information, which in turn could require further documentation. Therefore, it is important for the student to apply early. It is also important that the student keep Enrollment Services apprised of his/her current phone numbers, email addresses, and mailing addresses as students may also receive US postal mail and or phone communications from the financial aid office. Aid application may be denied if mail is returned due to a bad mailing address.

Grants
Grants are funds that do not have to be repaid, as long as the class is required for the completion of the student's Program of Study. Non-credit students in the clock hour program may receive a clock hour grant to attend classes as a way to pay for the cost of the student's education after high school. The lender is the U.S. Department of Education rather than a bank or other financial institution. While the Direct Loan, eligible students borrow directly from the federal government and have a single contact—their loan servicer—for everything related to the repayment of their loans. Additionally, the student will have online access to their Direct Loan account information at www.NSLDS.ED.GOV. By submitting the FASFA, students automatically apply for all available aid. Awarding is subject to student eligibility, including program and existing debt level, as well as subject to terms of a default management plan. All student borrowers are required to attend an entrance counseling session as well as an exit interview to ensure full understanding of rights and responsibilities associated with a student loan. The student must still be enrolled in their program and eligible for the loan at the time of disbursement (for Credit programs, the student must be enrolled in six (6) or more viable credit hours; classes graded with a grade of F, Y, Z, W are no longer viable). An exit interview must also be completed when a student is withdrawn or graduates from a program.

Federal Student Services 2019-2020

Federal Supplemental Educational Opportunity Grants (FSEOG)
FSEOG awards are subject to fund availability, student need, packaging policy, and enrollment status. Per federal regulation, priority is given to students who have exceptional financial need and for students who are also eligible for a Pell Grant. Award amounts may vary according to fund availability, student need, packaging policy, and enrollment status.

Leveraging Educational Assistance Partnership (LEAP)
LEAP recipients must be Arizona state residents and enrolled at least half-time. Award amounts will vary depending on fund availability, student need, packaging policy, and enrollment status.

Scholarships
Scholarships generally do not require repayment. Scholarships come from a variety of sources and are awarded based on criteria specific to a particular scholarship. Scholarships are typically competitive and no student should assume funds are guaranteed until either notified by a donor of their award or funds have been awarded to student's account and are viewable. By federal regulation, scholarships must be considered as a resource in determining eligibility for federal student aid. Receipt of a scholarship could cause a reduction in federal funds already awarded. Students are responsible to report any scholarships received.

Students are encouraged to apply for any and all scholarships for which they meet qualifications. Scholarships are posted on the Scholarship Blog which can be found at: http://gatewayccfinancialaid.blogspot.com/. New scholarships become available throughout the year, so students should monitor this site on a regular basis. Free scholarship information and searches are also available at this site. State regulations (HB2008) require that all scholarships awarded and disbursed through the GateWay Community Scholarship Office also must be accompanied by documentation of proof of lawful presence in the United States as well as a signed jerjury statement provided on the scholarship application or at Enrollment Services. Students who have not submitted the required information will be contacted and cannot be awarded the scholarship until all required documents have been received.

Employment
Students who are looking for employment at Gateway Community College may be offered part-time employment on campus, with work hours structured around the student's class schedule. Students looking for part-time jobs on campus should begin their search with the job postings found in Career Services.

Federal Work-Study (FWS)
FWS awards are based on fund availability, student need, and enrollment status. Students must apply for positions through Career Services. Students must go through an interviewing process. There is no guarantee that every student will be placed or that they will earn the entire amount of their awards.

Non-Work Study Employment
Some departments on campus may have institutional funds to hire student employees. Positions for these work opportunities may be posted in Career Services.

Federal Loans - William D. Ford Federal Direct Loan Program (Direct Loan)
Direct Loans are low-interest loans for students and parents to help pay for the cost of a student's education after high school. The lender is the U.S. Department of Education rather than a bank or other financial institution. With the Direct Loan, eligible students borrow directly from the federal government and have a single contact—their loan servicer—for everything related to the repayment of their loans. Additionally, the student will have online access to their Direct Loan account information at www.NSLDS.ED.GOV. By submitting the FASFA, students automatically apply for all available aid. Awarding is subject to student eligibility, including program and existing debt level, as well as subject to terms of a default management plan. All student borrowers are required to attend an entrance counseling session as well as an exit interview to ensure full understanding of rights and responsibilities associated with a student loan. The student must still be enrolled in their program and eligible for the loan at the time of disbursement (for Credit programs, the student must be enrolled in six (6) or more viable credit hours; classes graded with a grade of F, Y, Z, W are no longer viable). An exit interview must also be completed when a student is withdrawn or graduates from a program.

The interest rate on Direct Loans are variable, but will never exceed 8.25%. Accepting all loans offered may negatively affect eligibility for need-based scholarships and federal work study opportunities. Loans always require repayment, so students are encouraged to take a loan only after exploring all other funding possibilities.
non-citizen; be admitted as a regular student in an eligible program and enrolled in classes that pertain to that program only; make satisfactory academic progress; have a high school diploma or GED; apply by completing the Free Application for Federal Student Aid (FAFSA) using the student's legal name and valid Social Security Number; show financial "need" per federal regulation (for need-based aid, such as grants and work study) be registered with Selective Service, if required to do so; not be concurrently enrolled in high school; not be in default on any Title IV student loan or owe repayment on any Title IV student grant; not be convicted of certain drug trafficking or possession laws; must provide all documentation requested; and must use any funds received for educational purposes only. There are limits to the amount of grants and loans a student can receive in a year and in their lifetime. Federal student aid can never be received from more than one institution at a time.

Students are required to be enrolled and attending credit hours before financial aid funds (Title IV) can be disbursed. Disbursement of aid will occur when the disbursement process begins for the semester/payment period or shortly after the start of the first class, whichever comes later. Students awarded a loan for one semester/payment period will receive their loan disbursements in two separate, but even amounts, with the second disbursement coming no sooner than half-way through the semester. In order to receive the second disbursement, the student must be in good academic status, currently attending, enrolled in a minimum of six (6) credit hours, and with no less than six (6) viable hours (viable hours are hours that have not been withdrawn or dropped from, and or graded with a failed grade of F, Z, or Y). If the student's level of enrollment is reduced after financial aid has been disbursed, the award must be recalculated and the student may owe a repayment.

How to Apply

Students are encouraged to apply early. Priority consideration for limited financial aid funds may be given to those completing the application process in full prior to April 1. Continuing students must reapply for each academic year. Students enrolling for the first time during spring or summer should apply as early as possible prior to the beginning of the semester/payment period they plan to attend.

Students requesting financial assistance may begin the application process by completing the Free Application for Federal Student Aid (FAFSA). To expedite processing for attendance in a credit hour program, designate GateWay Community College (code 008303) in step six (6), for attendance in a clock hour program, designate GateWay Community College Skill Center (code E00701). Students apply electronically at WWW.FAFSA.ED.GOV. Students who need help applying can receive assistance with their federal aid application in the Enrollment Service area at any of the GateWay Community College sites.

After submitting the FAFSA to the processor, students will receive a Student Aid Report (SAR). If the codes for GateWay Community College (008303 or E00701) are entered on the FAFSA, we will also receive the results electronically. After the application is submitted online, students must monitor their My.maricopa.edu account and their Maricopa Gmail account frequently as additional documents may be required to complete their application or resolve any inconsistencies that may arise. Student financial aid applications cannot be reviewed until all requested documents have been received. Review of documents originally submitted sometimes triggers the need for additional information, which in turn could require further documentation. Therefore, it is important for the student to apply early. It is also important that the student keep Enrollment Services apprised of his/her current phone numbers, email addresses, and mailing addresses as students may also receive US postal mail and or phone communications from the financial aid office. Aid application may be denied if mail is returned due to a bad mailing address.

Grants

Grants are funds that do not have to be repaid, as long as the class is required for the completion of the student's Program of Study. The student enrolls in the classes for which the grant was received. Students who withdraw or cease to attend may have to repay some or all of the grant.

Federal Pell Grant

Eligibility for Pell Grant must be determined first. Pell awards are based on need, with amounts dependent on congressional appropriations and cost of attendance. The amount of the student's award in a Credit hour program is determined by their enrollment status (full-time, three-quarter-time, half-time, or less than half-time). The amount of the Pell Grant awarded to students enrolled in a Clock hour program is similar, though it is determined by a proportion of hours in the program against the hours found in an academic year. As of July 1, 2012, students have a lifetime limitation of 600% Pell Grant which is the equivalent of 12 full-time semesters/payment periods. Reaching the lifetime maximum may affect eligibility for assistance in other federal student aid programs.

Federal Services 2019-2020

Federal Supplemental Educational Opportunity Grants (FSEOG)

FSEOG awards are subject to fund availability, student need, packaging policy, and enrollment status. Per federal regulation, priority is given to students who have exceptional financial need and for students who are also eligible for a Pell Grant. Award amounts may vary according to fund availability, student need, packaging policy, and enrollment status.

Leveraging Educational Assistance Partnership (LEAP)

LEAP recipients must be Arizona state residents and enrolled at least half-time. Award amounts will vary depending on fund availability, student need, packaging policy, and enrollment status.

Scholarships

Scholarships generally do not require repayment. Scholarships come from a variety of sources and are awarded based on criteria specific to a particular scholarship. Scholarships are typically competitive and no student should assume funds are guaranteed until either notified by a donor of their award or funds have been awarded to student's account and are viewable. By federal regulation, scholarships must be considered as a resource in determining eligibility for federal student aid. Receipt of a scholarship could cause a reduction in federal funds already awarded. Students are responsible to report any scholarships received.

Students are encouraged to apply for any and all scholarships for which they meet qualifications. Scholarships are posted on the Scholarship Blog which can be found at: http://gatewayccfinancialaid.blogspot.com/. New scholarships become available throughout the year, so students should monitor this site on a regular basis. Free scholarship information and searches are also available at this state. Site regulations (HB2008) require that all scholarships awarded and disbursed through the GateWay Community Scholarship Office also must be accompanied by documentation of proof of lawful presence in the United States as well as a signed perjury statement provided on the scholarship application or at Enrollment Services. Students who have not submitted the required information will be contacted and cannot be awarded the scholarship until all required documents have been received.

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Federal Loans - William D. Ford Federal Direct Loan Program (Direct Loan)

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The interest rate on Direct Loans are variable, but will never exceed 8.25%. Accepting all loans offered may negatively affect eligibility for need-based scholarships and federal work study opportunities. Loans always require repayment, so students are encouraged to take a loan only after exploring all other funding possibilities.
Subsidized Loan
Eligible students who meet the federal definition of "need" may receive Subsidized loans, whereby the federal government pays interest on the loan until the student enters repayment. No interest is charged as long as the student is enrolled at least half-time and during deferment periods.

Unsubsidized Loan
Students who are otherwise eligible for loan, but who do not qualify for the Subsidized loan, may receive Unsubsidized loans. Interest immediately begins accruing on the Unsubsidized loan and the student will be responsible for the interest from the moment the loan is disbursed until it is paid in full.

Effective July 1, 2013 (for all students who receive loans for the first time), the Federal Direct Subsidized Loan has a maximum period of time that they will be eligible for the interest subsidy. This period of time cannot exceed 150% of the published length of the student's program or three years, whichever is less. Additionally, this timeframe is cumulative and will carry over when students change their programs of study. If students continue enrollment after receiving subsidized loans for their maximum eligibility period, they will lose eligibility for additional subsidized loans. Furthermore, their prior subsidized loans will begin accruing interest like the Federal Direct Unsubsidized loan.

Treatment of Title IV Aid when a Student Withdraws
The law specifies how your school must determine the amount of Title IV program assistance that you earn if you withdraw from school. The Title IV programs that are covered by this law are the following: Federal Pell Grants, National SMART grants, TEACH grants, Stafford Loans, PLUS Loans, Federal Supplemental Educational Opportunity Grants (FSEOGs), and Federal Perkins Loans.

When you withdraw during your payment period or period of enrollment (you may contact the Financial Aid office to define these for you and tell you which one applies; the amount of Title IV program assistance that you have earned up to that point is determined by a specific formula. If you received (or your school or parent received on your behalf) less assistance than the amount that you earned, you may be able to receive those additional funds. If you received more assistance than you earned, the excess funds must be returned by the school and/or you.

The amount of assistance that you have earned is determined on a pro-rata basis. For example, if you completed 30% of your payment period or period of enrollment, you earn 30% of the assistance you were originally scheduled to receive. Once you have completed more than 60% of the payment period or period of enrollment, you earn all the assistance that you were scheduled to receive for that period.

If you did not receive all of the funds that you earned, you may be due a post-withdrawal disbursement. If your post-withdrawal disbursement includes loan funds, your school must get your permission before it can disburse them. You may choose to decline some or all of the loan funds so that you don't incur additional debt. Your school may automatically use all or a portion of your post-withdrawal disbursement of grant funds for tuition, fees, and room and board charges (as contracted with the school). The school needs your permission to use the post-withdrawal grant disbursement for all other school charges. If you do not give your permission, you will be offered the funds. However, it may be in your best interest to allow the school to keep the funds to reduce your debt at the school. There are some Title IV funds that you were scheduled to receive that cannot be disbursed to you once you withdraw because of other eligibility requirements. For example, if you are a first-time, first-year undergraduate student and you have not completed the first thirty (30) days of your program before you withdraw, you will not receive any FFEL or Direct Loan funds that you would have received had you remained enrolled past the 30th day.

If you receive (or your school) excess Title IV program funds that must be returned, your school must return a portion of the excess to the lesser of the following:

1. Your institutional charges multiplied by the unearned percentage of your funds, OR
2. The entire amount of excess funds.

The school must return this amount even if it did not keep this amount of your Title IV program funds.

If your school is not required to return all of the excess funds, you must return the remaining amount. Any loan funds that you must return, you (or your parent) for a PLUS Loan repay, in accordance with the terms of the promissory note, that is, you make scheduled payments to the holder of the loan over a period of time. Any amount of unearned grant funds that you must return is called an overpayment. The maximum amount of a grant overpayment that you must repay is half of the grant funds you received or were scheduled to receive. You must make arrangements with your school or the Department of Education to return the unearned grant funds.

The requirements for Title IV program funds when you withdraw are separate from any refund policy that your school may have. Therefore, you may still owe funds to the school to cover unpaid institutional charges. You will be charged for any Title IV program funds you received and that GateWay was required to return.

Maricopa Community Colleges Standards of Satisfactory Academic Progress (SAP) for Financial Aid Eligibility
Federal regulations (CFR 668.22(f) and 668.34) require a student to move toward the completion of a degree or certificate within an eligible program when receiving financial aid. Specific requirements for academic progress for financial aid recipients are applied differently than Scholastic Standards. Federal regulations state that Academic Progress Standards must include a review of all periods of enrollment, regardless of whether or not aid was received. Students will be evaluated using the standards described below. Failure to meet any of these minimum standards will result in loss of Title IV, HEA, and program (financial aid) eligibility.

Evaluation Period
Standards of Satisfactory Academic Progress (SAP) will be evaluated at the end of each semester or payment period; Fall, Spring, and Summer. Programs less than one year in length will be evaluated at the midpoint of the program. Non-standard sessions will be evaluated at the completion of the session.

Standards of Satisfactory Academic Progress (for Credit Hour students)
Standards of Satisfactory Academic Progress (SAP) are evaluated on each of the three (3) measurements outlined below. Failure to meet any of these standards will result in suspension of eligibility for financial aid. Note: Grades of F, I, N, W, X, Y, Z, and courses not yet graded are considered attempted by not meeting progress standards for the purposes of financial aid.

Grade Point Measurement: Students must meet the following credit hour/cumulative grade point average (CGPA):

<table>
<thead>
<tr>
<th>Total Credits Attempted</th>
<th>Minimum CGPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 15.75</td>
<td>1.60</td>
</tr>
<tr>
<td>16-30.75</td>
<td>1.75</td>
</tr>
<tr>
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<td>1.90</td>
</tr>
<tr>
<td>46+</td>
<td>2.00</td>
</tr>
</tbody>
</table>

*For which grade points are computed

Pace of Progress Measurement: Students must successfully complete 2/3 (66.67%) of all attempted coursework.

Maximum Time Frame Measurement: Students have attempted more than 150% of the published credits required for their program of study are considered not meeting SAP.

Standards of Satisfactory Academic Progress (for Clock Hour students)
Standards of Satisfactory Academic Progress (SAP) for Clock Hour students are evaluated on attendance and graded coursework. Students must meet the following criteria:

- Students must complete with a passing grade (C, P, or better) all coursework attempted and graded, within that evaluation period/payment period.
- Students must meet occupational competencies required at the time of evaluation (the progress report sent to the financial aid department must indicate passing all competencies related to the prior payment period).
- Students must attend at least 90% of every class assigned to them during the evaluation period/payment period (some programs may require the student to attend 100% of all hours in their program).

Student Services 2019-2020
half of the grant funds you received or were scheduled to receive. You must make arrangements with your school or the Department of Education to return the unearned grant funds.

The requirements for Title IV program funds when you withdraw are separate from any refund policy that your school may have. Therefore, you may still owe funds to the school to cover unpaid institutional charges. You will be charged for any Title IV program funds you received and that GateWay was required to return.

Maricopa Community Colleges Standards of Satisfactory Academic Progress (SAP) for Financial Aid Eligibility
Federal regulations (CFR 668.32(f) and 668.34) require a student to move toward the completion of a degree or certificate within an eligible program when receiving financial aid. Specific requirements for academic progress for financial aid recipients are applied differently than Scholastic Standards. Federal regulations state that Academic Progress Standards must include a review of all periods of enrollment, regardless of whether or not aid was received. Students will be evaluated using the standards described below. Failure to meet any of these minimum standards will result in loss of Title IV, HEA program (federal financial aid) eligibility.

Evaluation Period
Standards of Satisfactory Academic Progress (SAP) will be evaluated at the end of each semester or payment period; Fall, Spring, and Summer. Programs less than one year in length will be evaluated at the midpoint of the program. Non-standard sessions will be evaluated at the completion of the session.

Standards of Satisfactory Academic Progress (for Credit Hour students)
Standards of Satisfactory Academic Progress (SAP) are evaluated on each of the three (3) measurements outlined below. Failure to meet any of these standards will result in suspension of eligibility for financial aid. Note: Grades of F, I, N, W, X, Y, Z, and courses not yet graded are considered attempted but not meeting progress standards for the purposes of financial aid.

**Grade Point Measurement:** Students must meet the following credit hour/cumulative grade point average (CGPA):

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*for which grade points are computed*

**Pace of Progress Measurement:** Students must successfully complete 2/3 (66.67%) of all attempted coursework.

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Standards of Satisfactory Academic Progress (for Clock Hour students)
Standards of Satisfactory Academic Progress (SAP) for Clock Hour students are evaluated on attendance and graded coursework. Students must meet the following criteria:

- Students must complete with a passing grade (C, P, or better) all coursework attempted and graded, within that evaluation period/payment period.
- Students must meet occupational competencies required at the time of evaluation (the progress report sent to the financial aid department must indicate passing all competencies related to the prior payment period).
- Students must attend at least 90% of every class assigned to them during the evaluation period/payment period (some programs may require the student to attend 100% of all hours in their program) and cannot extend the length of their program more than 110%.

See these SAP addendums
Standards of Satisfactory Academic Progress (SAP for Credit Programs)
Standards of Satisfactory Academic Progress (SAP for Clock Programs)
Coursework Treatment in SAP Calculation (for Credit)

Coursework taken during the semester also included in the evaluation include the following:

- Courses funded through a consortium agreement.
- All attempted remedial credits.
- Repeated course work.

Coursework included in the Pace of Progression evaluation include the following:

- All of those included in the semester evaluation.
- All evaluated transfer credits.

Coursework included in the Maximum Time Frame evaluation include the following:

- All of those included in the Pace of Progression evaluation.
- Any Bachelor's degree or higher earned will be considered to have exhausted maximum timeframe eligibility.
- All coursework forgiven through the academic renewal process.

Coursework not included in SAP evaluation include the following:

- Audited courses.
- Non-credit courses.
- Credit by examination.
- Credit for prior learning option (as outlined in the college general catalog).

Notification

Students that have applied for federal assistance, but who do not meet the standards, will notified. This notification will direct students to information regarding the appeal process.

Ineligibility Determination Appeal

Any student who has lost financial aid eligibility may only regain eligibility by meeting the minimum SAP standards. Coursework taken at other colleges will not be considered for reinstatement purposes. Classes taken at other colleges may be taken into consideration when determining whether aid will be reinstated at GateWay Community College.

Regaining Eligibility

A student who has lost financial aid eligibility may only regain eligibility by meeting the minimum SAP standards. Coursework taken at other colleges will not be considered for reinstatement purposes. Classes taken at other colleges may be taken into consideration when determining whether aid will be reinstated at GateWay Community College.

Transferring to GateWay Community College for Clock Hours

A student enrolling in Gateway Community College's Beauty and Wellness Program after having attended another post-secondary institutions can have coursework evaluated for transfer hours. To be eligible for evaluation, coursework must appear on official transcripts and be mailed directly from the source institution to Gateway Community College. Course evaluation will consist of course evaluation, formal assessment and program requirements in alignment with state board requirements.

Terminology and Information Pertaining to this Policy

- Academic Plan - A plan developed through the SAP Appeal Process which will lead a student to qualify for further Title IV, HEA program funds.
- Appeal - A process by which a student who is not meeting the institution's satisfactory academic progress standards petitions the institution for reconsideration of the student's eligibility for Title IV, HEA program assistance.
- Attempted Credit - Any credit for which a grade of A, B, C, D, F, I, IP, N, P, W, X, Y, or Z is received and courses not yet graded.
- CGPA (Cumulative Grade Point Average) - The MCCCD grading policy is published in the administrative regulations at 2.3.3. The CGPA does not include credits accepted in transfer.

Extenuating Circumstance - Examples of extenuating circumstances include; personal injury or illness, serious illness or death within the immediate family, or other circumstance beyond the reasonable control of the student.

Financial Aid Probation - A status assigned by an institution to a student who fails to make satisfactory academic progress and who has appealed and has had eligibility for aid reinstated. A student in this status may not receive Title IV, HEA program funds for the subsequent payment period unless the student makes satisfactory academic progress and the institution determines that the student met the requirements specified by the institution in the academic plan for the student.

Financial Aid Suspension - The status assigned upon failing to meet the minimum SAP standards or the terms of a probationary status. Students in this status are not eligible to receive Title IV, HEA assistance.

Non-Standard Session - Sessions that do not follow the traditional start and end dates for the semester.

Summer Sessions - Enrollment in any or all Summer Sessions within the same calendar year will be considered one term.

Supporting Documentation - Examples of extenuating circumstances include; an obituary notice, divorce decree, an accident report, or a letter from a physician, attorney, social services agency, etc.

For more information, contact the college Financial Aid Office.

FOOD SERVICE

LOCATION: Washington Campus Gecko Café // Main Building (southeast corner), Room MA1144
TELEPHONE: (602) 286-8308
WEBSITE: WWW.DINEONCAMPUS.COM
EMAIL: chartwells@gatewaycc.edu

Fall and Spring Semester Hours
Monday - Thursday: 7:30 a.m. - 7:30 p.m.
Friday: 7:30 a.m. - 2:00 p.m.

Summer Semester Hours
Monday - Thursday: 8:00 a.m. - 1:00 p.m.
Friday: Closed

A variety of menu items and beverages are available at reasonable prices. Breakfast items include: breakfast burritos, waffles, eggs, bacon, bagels, donuts, etc. Lunch and dinner items include: burgers, fries, soup, sandwiches, salads and daily features. Provide a variety of salads, sandwiches and yogurt parfaits for a fast lunch on the go.

Washington Campus Gecko Express Café

LOCATION: Integrated Education Building, Room IE1140 (Next to Library)
TELEPHONE: (602) 286-8308
WEBSITE: WWW.GATEWAYCC.EDU/DINING
EMAIL: chartwells@gatewaycc.edu

A variety of hot and cold coffee and tea beverages are available. Food items include: bagels, grab-and-go sandwiches and salads, scones, danishes, and cookies.

Central City The Works Café

LOCATION: B Building, Room Portal B (Enter from center courtyard)
TELEPHONE: (602) 286-8308
WEBSITE: WWW.GATEWAYCC.EDU/DINING
EMAIL: chartwells@gatewaycc.edu

Hours
Open during business hours.
Coursework Treatment in SAP Calculation (for Credit)
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- Any Bachelor's degree or higher earned will be considered to have exhausted maximum timeframe eligibility.
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Coursework not included in SAP evaluation include the following:

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Notification
Students that have applied for federal assistance, but who do not meet the standards, will notified. This notification will direct students to information regarding the appeal process.

Ineligibility Determination Appeal
Any student who has lost financial aid eligibility may only regain eligibility by meeting the minimum SAP standards. Coursework taken at other colleges will not be considered for reinstatement purposes. Classes taken at other colleges may be taken into consideration when determining whether aid will be reinstated at GateWay Community College.

Regaining Eligibility
A student who has lost financial aid eligibility may only regain eligibility by meeting the minimum SAP standards. Coursework taken at other colleges will not be considered for reinstatement purposes. Classes taken at other colleges may be taken into consideration when determining whether aid will be reinstated at GateWay Community College.

Transferring to GateWay Community College for Clock Hours
A student enrolling in Gateway Community College's Beauty and Wellness Program after having attended other post-secondary institutions can have coursework evaluated for transfer hours. To be eligible for evaluation, coursework must appear on official transcripts and be mailed directly from the source institution to Gateway Community College. Course evaluation will consist of course evaluation, formal assessment and program requirements in alignment with state board requirements.

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Sessions that do not follow the traditional start and end dates for the semester.

### Summer Sessions
- Enrollment in any or all Summer Sessions within the same calendar year will be considered one term.
- Courses funded through a consortium agreement.
- An obituary notice, divorce decree, an accident report, or a letter from a physician, attorney, social services agency, etc.

### For more information, contact the college Financial Aid Office.

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**FOOD SERVICE**

**LOCATION:** Washington Campus Gecko Café // Main Building (southeast corner), Room MA1114  
**TELEPHONE:** (602) 286-8308
**WEBSITE:** WWW.GATEWAYCC.EDU/DINING
**EMAIL:** chartwells@gatewaycc.edu

**Fall and Spring Semester Hours**
Monday - Thursday: 7:30 a.m. - 7:30 p.m.  
Monday - Thursday: 8:00 a.m. - 1:00 p.m.
Friday: 7:30 a.m. - 2:00 p.m.

A variety of menu items and beverages are available at reasonable prices. Breakfast items include: breakfast burritos, waffles, eggs, bacon, bagels, donuts, etc. Lunch and dinner items include: burgers, fries, soup, sandwiches, salads and daily features. Provide a variety of salads, sandwiches and yogurt parfaits for a fast lunch on the go.

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**Central City The Works Café**

**LOCATION:** B Building, Room Portal 8 (Enter from center courtyard)
**TELEPHONE:** (602) 286-8308
**WEBSITE:** WWW.GATEWAYCC.EDU/DINING
**EMAIL:** chartwells@gatewaycc.edu

**Hours**
Open during business hours.
Students with a grade point average of 3.25 and completion of 12 or more credits at the 100 level are invited to apply. The Honors program is designed to enhance students' intellectual growth by offering challenging opportunities for increased contact with leading teachers in all divisions of study. The program includes independent study with faculty mentors, special activities, and the Honors Forum Series which permits students to interact with distinguished lecturers.

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Students Enjoy:
- Cultural and social activities
- Faculty mentors
- Financial stipends and scholarships
- Individualized instruction through special projects
- Special recognition on transcripts and diplomas

Students with a grade point average of 3.25 and completion of 12 or more credits at the 100 level are invited to apply. Those admitted to the program qualify for Tuition rebates of up to $500 or certain Scholarships given to honors students in good standing. For full details, consult the Honors Coordinator, Dr. Andrew Lenartz, (602) 286-8374.
HONORS PROGRAM
LOCATION: Washington Campus // AF Building, Room AF106
TELEPHONE: Washington Campus // (602) 286-8722
WEBSITE: WWW.GATEWAYCC.EDU/HONORS-PROGRAM
EMAIL: honors@gatewaycc.edu

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In addition, online tutoring is available in various subjects and for a variety of writing tasks. Contact the Learning Center to learn how to access the service.

**LIBRARY**

**LOCATION:**
Washington Campus // Integrated Education Building, Room IE1115 (Located next to the Gecko Express Cafe)  
Central City // B410

**TELEPHONE:**
Washington Campus // Circulation/Account Information  
(602) 286-8454; Reference/Research Assistance (602) 286-8458  
Central City // (602) 238-4316

**WEBSITE:** [WWW.GATEWAYCC.EDU/LIBRARY](http://WWW.GATEWAYCC.EDU/LIBRARY)  
**EMAIL:** library@gwmail.maricopa.edu

Note: Hours subject to change and may vary when classes are not in session.

The GateWay Library supports the College's educational programs and culturally diverse community by providing responsive service and accessible resources in a learner-centered environment.

**In-Person Services**
- Account setup and verification  
- "Ask a Librarian" Chat reference service: [WWW.MARICOPA.EDU/ASKLIBRARIAN](http://WWW.MARICOPA.EDU/ASKLIBRARIAN)  
- Computer access, including WiFi & Pay 4 Print  
- Course reserves  
- Full-text databases of magazines, journals, newspapers, encyclopedias, and images*  
- Full-text eBooks*  
- Group and individual learning spaces  
- Locate and check out books, DVD's and more  
- Online Services & Support (Available 24/7)  
- Reference and research assistance  
- Streaming media*  
- Try One Search!  
- Web-based Catalog: Find books, DVDs and more  
*Off-campu access to these services requires login with MEID and My.maricopa.edu password.

**SCHOLASTIC STANDARDS**

**Absences**
Absences begin to accumulate with the first scheduled class meeting. Students may be withdrawn from a class or program for unsatisfactory attendance. Students should refer to their course syllabus for specific attendance requirements.

**Attendance Policy**
Students enrolled in Clock hour programs must complete a minimum of 90% of the required hours for each course within their program. Completing over 100% of program hours may have financial implications.

Additional requirements may be required due to one or more of the circumstances stated below:

- The courses within a program have a stricter attendance policy than the 90% stated herein.
- An instructor may set a course attendance requirement higher, when make-up of time is not practical due to the nature and/or complexity of the instruction, availability of equipment, program accrediting body requirements, or the inability to replicate the learning environment.
- The laboratory/externship hours are not always possible to make-up. When an absence results in the inability of the student to develop and demonstrate clinical practice objectives and meet the required hours of the course necessary for credit, the student cannot receive a passing grade and will be withdrawn from the program.
- Financial Aid eligible programs that are less than 720 hours in length require completion of a minimum of 648 hours.

**Attendance Standards**
Students who fail to maintain attendance standards may be withdrawn from the course and the program, and may experience a loss of eligibility of funding to include, but not limited to, Federal Student Aid, VA Education Benefits, and third-party agency funding. Refer to the catalog section on Satisfactory Academic Progress regarding continuation of federal student aid.

Students should refer to their course syllabus for specific attendance requirements. Students are responsible for verifying that their attendance is accurately recorded in the attendance system. If students identify an attendance error they must notify their instructor as soon as possible, and no later than the third business day following the date of the error. Failure to maintain attendance standards may jeopardize a student's ability to remain in the program.

**Minimum Progress**
Trade and Technical Training student progress is measured by the student's ability to accomplish competencies within stated time frames. Failure to meet all required competencies in a course may result in withdrawal from the program at the end of the course.
In addition, online tutoring is available in various subjects and for a variety of writing tasks. Contact the Learning Center to learn how to access the service.

LIBRARY
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Washington Campus // Integrated Education Building, Room IE1115 (Located next to the Gecko Express Cafe)
Central City // B410

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Central City // (602) 238-4316
WEBSITE: WWW.GATEWAYCC.EDU/LIBRARY
EMAIL: library@gwmail.maricopa.edu

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In-Person Services
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- Computer access, including WiFi & Pay 4 Print
- Course reserves
- Full-text databases of magazines, journals, newspapers, encyclopedias, and images*
- Full-text eBooks*
- Group and individual learning spaces
- Locate and check out books, DVD's and more
- Online Services & Support (Available 24/7)
- Reference and research assistance
- Streaming media*
- Try One Search!
- Web-based Catalog: Find books, DVDs and more
- *Off-campus access to these services requires login with MEID and My.maricopa.edu password.

SCHOLASTIC STANDARDS
Absences
Absences begin to accumulate with the first scheduled class meeting. Students may be withdrawn from a class or program for unsatisfactory attendance. Students should refer to their course syllabus for specific attendance requirements.

Attendance Policy
Students enrolled in Clock hour programs must complete a minimum of 90% of the required hours for each course within their program. Completing over 100% of program hours may have financial implications.

Please note, no adjustments to tuition rates will be made for students who are within the attendance policy.

Additional requirements may be required due to one or more of the circumstances stated below:
- The courses within a program have a stricter attendance policy than the 90% stated herein.
- An instructor may set a course attendance requirement higher, when make-up of time is not practical due to the nature and/ or complexity of the instruction, availability of equipment, program accrediting body requirements, or the inability to replicate the learning environment.
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- Financial Aid eligible programs that are less than 720 hours in length require completion of a minimum of 648 hours.

Attendance Standards
Students who fail to maintain attendance standards may be withdrawn from the course and the program, and may experience a loss of eligibility of funding to include, but not limited to, Federal Student Aid, VA Education Benefits, and third-party agency funding. Refer to the catalog section on Satisfactory Academic Progress regarding continuation of federal student aid.

Minimum Progress
Trade and Technical Training student progress is measured by the student's ability to accomplish competencies within stated time frames. Failure to meet all required competencies in a course may result in withdrawal from the program at the end of the course.

Student Services 2019-2020
Living Accommodations
GateWay Community College does not provide dormitory accommodations. The Center for Student Life/Leadership has provided an information board of various housing locations. For further assistance, contact the Center for Student Life/Leadership at (602) 286-8700.

MY.MARICOPA.EDU
MY.MARICOPA.EDU provides access for students, faculty and staff to the course management systems, the student self-serve functions for all Maricopa Community Colleges, and the Google Apps for email. Through the Student Center, students can register for classes, print class schedules, make a payment, view grades, request transcripts, and update contact and address information.

SCHOLASTIC STANDARDS
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Absences begin to accumulate with the first scheduled class meeting. Students may be withdrawn from a class or program for unsatisfactory attendance. Students should refer to their course syllabus for specific attendance requirements.

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Minimum Progress
Trade and Technical Training student progress is measured by the student's ability to accomplish competencies within stated time frames. Failure to meet all required competencies in a course may result in withdrawal from the program at the end of the course.

Student Services 2019-2020
To maintain satisfactory academic progress, a student must successfully complete all courses with a P (C or higher). A student who declares a clock hour program of study (certificate seeking) must successfully complete courses that constitute the desired program in the order in which they are scheduled. If a student does not make satisfactory academic progress in a current class, the student will be withdrawn from that course and cannot advance to the next course in sequence.

The student will also be terminated from the Program of Study and withdrawn from remaining courses due to failure to meet program completion requirements by not maintaining satisfactory academic progress.

Re-Enrollment from Withdrawal for Clock Hours
Students who wish to return to school must initiate the re-enrollment process through Enrollment Services. Prior to re-enrollment, student academic records will be evaluated to determine appropriate class schedule, based on current catalog requirements. Depending on the program, students may be required to start the program in the beginning and any coursework completed/started would need to be repeated.

Withdrawal Due to Unsatisfactory Attendance
Students who do not maintain the attendance standard at a rate of 90% or higher for an individual course will fail the current course and/or be withdrawn from the program. Students with consecutive absences may fail the current course and be withdrawn from the program. Students who discontinue studies in a course or program may refer to Enrollment Services for specific information regarding withdrawal procedures and appeals.

Unemployment Insurance/Training Readjustment Act (TRA)
Students receiving Unemployment Insurance/Training Readjustment Act assistance should submit their unemployment claim forms to Enrollment Services by noon on Friday in order to receive their checks promptly. The completed forms will be delivered to the Department of Economic Security the following Monday.

General Graduation Requirements for Clock Programs
Catalog Under Which a Student Graduates

- Students maintaining continuous enrollment may graduate according to the catalog requirements in effect at the time of their enrollment.
- Students who have a break in their enrollment will be required to meet the catalog requirements in effect at the time of their re-enrollment or according to the requirements of any single catalog in effect during subsequent terms of continuous enrollment.
- Changing your requirement term may have a negative impact on your financial aid eligibility.
- All students are required to complete the program requirements as stated in the catalog requirements.
- The college reserves the right to make necessary course and program changes in order to meet current educational standards.
- Students will automatically have their program of study validated upon completion of their courses. Students who do not wish to have their certificate automatically awarded will need to notify the Admissions & Records Office in writing prior to the start of their final course.
- Students must complete all required courses with a P (C or higher) and meet the attendance requirement for their program of study.

Students who successfully complete their program of study will receive a Certificate of Competency upon final verification of coursework.

Licensure Disclaimer
Maricopa Community Colleges courses and programs prepare students for entry into a variety of professions. Many of these professions require that a person hold an occupational license or certificate in order to work in a particular field. Typically, a person must meet certain legal requirements before obtaining such a license or certificate. These requirements are established by county, state, or federal agencies and often are based on a person's character or whether the person has been convicted of a criminal offense. It is possible for a student who has obtained a degree or certificate from a community college to be denied the right to work in a particular profession, after completing the degree or certificate, because of concerns over the student's character or criminal background.

Any student preparing to enter a field for which a professional license or certificate is required is strongly advised to consult with the appropriate government agency that issues such credentials. That agency can provide the student complete information about any requirements the law imposes for working in a particular occupation.

STUDENT SUCCESS CENTER
LOCATION: Washington Campus // Main Building, Room MA1372
TELEPHONE AND EMAIL:
ACE (Achieving a College Education) Program // (602) 286-8195 // calderon@gateway.cc.edu
Dual Enrollment // (602) 286-8672 // dual@gatewaycc.edu
Early Alert // (602) 286-8032 // earlyalert@gatewaycc.edu
EXCEL // (602) 286-8175 // excel@gatewaycc.edu
Gecko Gear Up // (602) 286-8178 // geckogearup@gatewaycc.edu
Hoop of Learning Program // (602) 286-8930 // kordell.begay@gatewaycc.edu
New Student Orientation/First Year Experience (NSO/FYE) // (602) 286-8178 // http://www.gatewaycc.edu/orientation
TRIO Student Support Services (PROSPER) // (602) 286-8199 // trossss@gatewaycc.edu
TRIO Upward Bound // (602)286-8201 // adams@gatewaycc.edu

Fall and Spring Semester Hours
Monday - Friday: 8:00 a.m. - 4:30 p.m.
Saturday: 8:00 a.m. - 12:00 p.m.
Sunday: Closed

Summer Semester Hours
Monday - Thursday: 8:00 a.m. - 6:00 p.m.
Friday - Sunday: Closed

ACE PROGRAM (ACHIEVING A COLLEGE EDUCATION)
Achieving a College Education (ACE) is a nationally recognized program that targets high school students who traditionally would not consider going to college. ACE students are enrolled in concurrent college courses as high school juniors and seniors. They attend college classes during the summer and on Saturdays during the fall and spring semesters. Students can earn up to 24 college credits by the time they graduate from high school.

Please visit WWW.GATEWAYCC.EDU/ACE or for more information.

DUAL ENROLLMENT
Dual Enrollment is an opportunity for high school students to get an early start on college. Dual Enrollment courses allow students to earn both high school and college credit simultaneously during regular school hours at their high school. Dual Enrollment courses are high school courses taught at a college level for Maricopa Community College credit. The credit earned may be transferred to a community college or university upon high school graduation.

Please visit WWW.GATEWAYCC.EDU/DUAL-ENROLLMENT for more information.
To maintain satisfactory academic progress, a student must successfully complete all courses with a P (equivalent to a C or better). A student who declares a clock hour program of study (certificate seeking) must successfully complete courses that constitute the desired program in the order in which they are scheduled. If a student does not make satisfactory academic progress in a current class, the student will be withdrawn from that course and cannot advance to the next course in sequence.

The student will also be terminated from the Program of Study and withdrawn from remaining courses due to failure to meet program completion requirements by not maintaining satisfactory academic progress.

Re-Enrollment from Withdrawal for Clock Hours

Students who wish to return to school must initiate the re-enrollment process through Enrollment Services. Prior to re-enrollment, student academic records will be evaluated to determine appropriate class schedule, based on current catalog requirements. Depending on the program, students may be required to start the program in the beginning and any coursework completed/start would need to be repeated.

Withdrawal Due to Unsatisfactory Attendance

Students who do not maintain the attendance standard at a rate of 90% or higher for an individual course will fail the current course and/or be withdrawn from the program. Students with consecutive absences may fail the current course and be withdrawn from the program. Students who discontinue studies in a course or program may refer to Enrollment Services for specific information regarding withdrawal procedures and appeals.

Unemployment Insurance/Training Readjustment Act (TRA)

Students receiving Unemployment Insurance/Training Readjustment Act assistance should submit their unemployment claim forms to Enrollment Services by noon on Friday in order to receive their checks promptly. The completed forms will be delivered to the Department of Economic Security the following Monday.

General Graduation Requirements for Clock Programs

Catalog Under Which a Student Graduates

- Students maintaining continuous enrollment may graduate according to the catalog requirements in effect at the time of their enrollment.
- Students who have a break in their enrollment will be required to meet the catalog requirements in effect at the time of their re-enrollment or according to the requirements of any single catalog in effect during subsequent terms of continuous enrollment.
- Changing your requirement term may have a negative impact on your financial aid eligibility.
- All students are required to complete the program requirements as stated in the catalog requirements.
- The college reserves the right to make necessary course and program changes in order to meet current educational standards.
- Students will automatically have their program of study validated upon completion of their courses. Students who do not wish to have their certificate automatically awarded will need to notify the Admissions & Records Office in writing prior to the start of their final course.
- Students must complete all required courses with a P (C or higher) and meet the attendance requirement for their program of study. Students who successfully complete their program of study will receive a Certificate of Competency upon final verification of coursework.

Licensure Disclaimer

Maricopa Community Colleges courses and programs prepare students for entry into a variety of professions. Many of these professions require that a person hold an occupational license or certificate in order to work in a particular field. Typically, a person must meet certain legal requirements before obtaining such a license or certificate. These requirements are established by county, state, or federal agencies and are often based on a person’s character or whether the person has been convicted of a criminal offense. It is possible for a student who has obtained a degree or certificate from a college to be denied the right to work in a particular profession, after completing the degree or certificate, because of concerns over the student’s character or criminal background.

Any student preparing to enter a field for which a professional license or certificate is required is strongly advised to consult with the appropriate government agency that issues such credentials. That agency can provide the student complete information about any requirements it imposes for working in a particular occupation.
EARLY ALERT
The goal of the Early Alert program is to work with students individually and assist with creating an ongoing success plan that aids in overcoming any barrier to college success. The system allows faculty to be proactive, supportive, and involved in facilitating the academic components of student retention through early detection and intervention of students who are experiencing problems. The student may self-refer themselves to work with the success team.

Please visit WWW.GATEWAYCC.EDU/EARLYALERT for more information.

EXCEL
No Boundaries-just EXCEL: In partnership with the Arizona Community Foundation, and as one of only three colleges in MCCCD to offer the EXCEL Program to students who have earned no more than 24 transferable credit hours and have a 2.5 GPA or higher, the EXCEL program offers guidance in developing an Education Plan and personalized academic advisement, a dedicated Success Coach and committed Peer Mentors to support students in their academic endeavors and successfully transfer to a four-year university. EXCEL provides access to resources (e.g., laptops, calculators), assistance with scholarship opportunities and financial aid, and several workshops for students and their families.

Please visit WWW.GATEWAYCC.EDU/EXCEL for more information.

GECKO GEAR UP
Gecko Gear Up is the next required step to becoming an official GateWay Gecko and completing the enrollment process. During a Gecko Gear Up session, students will learn about tools designed to help discover their academic and/or career path, practice navigating the Student Center, receive initial academic advising, and begin enrolling in classes. Students will also learn about future financial aid workshops, payment plan options, and other success tips.

Please visit WWW.GATEWAYCC.EDU/ORIENTATION for more information.

HOOP OF LEARNING PROGRAM
The Maricopa Hoop of Learning (HDL) Program is an early high school-to-college bridge program that is designed to increase high school retention, graduation rates and enrollment into Maricopa Community Colleges for American Indian students. In addition, the program fosters educational resilience and career development. It’s also designed to develop strong positive cultural identities and personal integrity and offers a culturally relevant curriculum for urban American Indian students.

Please visit WWW.GATEWAYCC.EDU/HOOP-LEARNING for more information.

NEW STUDENT ORIENTATION/FIRST YEAR EXPERIENCE (NSO/FYE)
New Student Orientation is a welcome event for new students in order to introduce them to the campus and explain the resources that GateWay has to offer. At orientation, students will: Learn the fundamentals of being a successful student; Identify campus resources to help them stay on track; Discover student clubs, organizations, and the campus community. Students may also engage with faculty and participate in a resource fair.

Please visit WWW.GATEWAYCC.EDU/ORIENTATION for more information.

TRIO STUDENT SUPPORT SERVICES (PROSPER)
TRIO SSS (PROSPER) assists students with basic college requirements, motivates them toward the successful completion of their post-secondary education, and aids students in all aspects of the transfer process to a four-year institution. The program provides assistance with navigating the online student center, developing an Individual Education Plan, tutoring & mentoring, visiting college campuses, attending cultural events and community service, and applying for scholarships. The program is funded by the US Department of Education.

Please visit WWW.GATEWAYCC.EDU/TRIO-SSS for more information.

TRIO UPWARD BOUND
This program serves 67 eligible HS students preparing them for higher education helping them advance into and succeed at the college level. We provide academic advising, assessment, summer school programs, college/university campus visits, testing preparation, career workshops, tutoring/mentoring, cultural enrichments, and more. The goal is to increase college enrollment for first-generation and low-income students this program is also funded by the US Department of Education.

Please visit WWW.GATEWAYCC.EDU/UPWARD-BOUND for more information.
EARLY ALERT
The goal of the Early Alert program is to work with students individually and assist with creating an ongoing success plan that aids in overcoming any barrier to college success. The system allows faculty to be proactive, supportive, and involved in facilitating the academic components of student retention through early detection and intervention of students who are experiencing problems. The student may self-refer themselves to work with the success team.

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Please visit www.gatewaycc.edu/excel for more information.

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Please visit www.gatewaycc.edu/hoop-learning for more information.

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Please visit www.gatewaycc.edu/trio-sss for more information.

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Please visit www.gatewaycc.edu/upward-bound for more information.
The Veterans Services Center provides assistance to military members, veterans, and military/veteran dependent students to explore the numerous education opportunities. Veterans Services Center provides students with the exploration in a field of interest, degree pathway as well as academic advisement, scholarship opportunities, college/community resources, student support services, utilization of VA education benefits, military tuition assistance, tuition deferment, and university and/or workforce transition. For more information on veteran services please see Administration Regulation 2.9, please review the Maricopa County Community College District Policies and Procedures, located in the common pages.

The School Certifying Official acts as a liaison between the student and Department of Veterans Affairs, certifying enrollment and maintaining student files.

Student Responsibilities

- Request all official transcripts from previous college(s) and training(s) attended, including military transcripts.
- Ensure ATTENDANCE requirements are met for both Credit and Clock hour students.
- Report any or all changes in program of study to the School Certifying Official.
- After the start of your program of study, at a minimum quarterly, follow-up and meet with the School Certifying Official.
- Students are responsible for reporting any Scholarships received, providing documentation, to School Certifying Official.

The GateWay Veteran Center is located at 108 N. 40th Street, Phoenix, Arizona 85034, in the Main Building, Room MA1220. Students can visit the Veteran Services website at WWW.GATEWAYCC.EDU/VETERANS-SERVICES. Students can contact a Veteran Services staff member (School Certifying Official) via phone at (602)286-8076 or Email veterans@gatewaycc.edu with questions. Students can also make an appointment with a School Certifying Official to begin the process of their VA Education Benefits.

**Fall and Spring Semester Hours**
Monday - Thursday: 8:00 a.m. - 6:00 p.m.
Friday: 8:00 a.m. - 2:00 p.m.

**Summer Semester Hours**
Monday - Thursday: 7:00 a.m. - 6:00 p.m.
Friday: 7:00 a.m. - 6:00 p.m.

Services provided include the following:

- Academic Advisement
- Applying for the various VA and DoD education benefits
- Certification of VA Education Benefits for Chapters 30, 31, 33, 33TOE, 35, and 1606
- Connect & Navigate with various services and processes within the college
- Education Plan
- Employment Plan & Preparation
- FAFSA Understanding
- JST (Joint Service Transcripts)
- Lounge Area, Computers, Printing, and Study Room
- MyCAA TA (Tuition Assistance)
- Military TA (Tuition Assistance)
- NNEI (National Nursing Education Initiative)
- Registration / Enrollment Assistance
- Responsible Borrowing
- Transition assistance for active duty military to the college learning environment
- Tuition & Fees Deferment
- University Transfer Advisement
- VA Debt Management - Guidance and Resolution
- VA Work-Study Opportunity
- Veteran Resources Referral & Navigation of Services
- Veterans Club
- Workshops
VETERAN SERVICES
LOCATION: Washington Campus // Main Building, Room MA1220
TELEPHONE: (602) 286-8076
WEBSITE: WWW.GATEWAYCC.EDU/VETERANS-SERVICES
EMAIL: veterans@gatewaycc.edu

Veteran Services provides Military, Veteran, Spouse and Dependent students assistance with navigating the enrollment process and applying for their Department of Veterans Affairs Education Benefits. Veteran Services works closely with federal, regional and state Veterans Affairs offices in administering VA Education Benefits.

The Department of Veterans Affairs requires all persons using VA Education Benefits in pursuit of their education to make Satisfactory Academic Progress (SAP) toward their program of study. Satisfactory academic progress is defined in this catalog under the Financial Aid, Scholastic Standards and Attendance Policy. Students who do not meet SAP may have their VA Education Benefits affected and/or terminated.

The School Certifying Official acts as a liaison between the student and Department of Veterans Affairs, certifying enrollment and maintaining student files.

Student Responsibilities
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- University Transfer Advisement
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- VA Work-Study Opportunity
- Veteran Resources Referral & Navigation of Services
- Veterans Club
- Workshops

Some regulations include reference to Arizona Revised Statutes from the State of Arizona and are noted as "ARS" followed by a reference number.

For printed copies of the regulations for the calendar year you were first admitted and enrolled, visit the Library or Enrollment Services area on your campus or visit Gateway.edu/catalog for the corresponding student handbook and catalog year as well as the ADMINISTRATIVE REGULATIONS.
STUDENT RIGHTS AND RESPONSIBILITIES

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3.2 COPYRIGHT REGULATION
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4.4 TECHNOLOGY RESOURCE STANDARDS
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2.4.7 ABUSE-FREE ENVIRONMENT
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APENDIX S-16 STATEMENT ON THE ARIZONA MEDICAL MARIJUANA ACT (PROPOSITION 203)
2.8.1 ELIGIBILITY FOR ACCOMMODATIONS AND REQUIRED DISABILITY DOCUMENTATION
2.8.2 ELIGIBILITY OF STUDENTS TAKING A REDUCED COURSE LOAD
2.8.3 TECHNOLOGY ACCESSIBILITY
2.3.11 ACADEMIC MISCONDUCT
APENDIX ND-4 RELIGIOUS ACCOMODATION PROCEDURE AND FORM

DISCIPLINARY STANDARDS

2.5.1 DISCIPLINARY STANDARDS
2.5.2 STUDENT CONDUCT CODE
2.5.3 STUDENT RECORDS (FERPA)
APENDIX S-17 FERPA APPEAL PROCESS
Maricopa Community Colleges (MCCCD)
2019-2020 Associate in Arts (AA) Degree

Description

The Maricopa County Community College District Associate in Arts degree requires a minimum of 60 semester credits for the program of study; minimum total credits for major-specific pathway versions of the Associate in Arts degree vary. Refer to the Program (Degree) Search at curriculum.maricopa.edu for credit minimums for individual degree programs. A minimum grade point average of 2.0 and grades of “C” or higher are required to earn the degree. The Associate in Arts degree, including major-specific pathways within the degree, is governed by the MCCCD General Academic Policies for Transfer Degrees.

The Associate in Arts degree includes the following components:
I. Program Prerequisites (if applicable)
II. Required Courses (for major-specific pathway versions only)
III. Restricted Electives (for major-specific pathway versions only)
IV. Arizona General Education Curriculum for Arts (AGEC-A)
V. MCCCD Additional Requirements (Oral Communication and Critical Reading)
VI. General Electives (if needed to reach minimum credits for degree)

Purpose of the Degree

The Associate in Arts degree is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors in the Liberal Arts or programs of study other than business or science. Generally, the degree will transfer as a block without loss of credit to Arizona’s public universities and other institutions with district-wide articulation agreements. In most cases, courses used to satisfy the MCCCD Associate in Arts will apply to general university graduation requirements of the majors that align with the Associate in Arts degree; however, students need to be aware of any specific requirements of their intended major at the university to be sure they select courses that will meet them. Information regarding the articulation of the Associate in Arts with majors at the Arizona public universities can be accessed via the following website: www.aztransfer.com

Degree Requirements

The requirements for the Associate in Arts follow. All versions of the Associate in Arts require a minimum of 60 credits; for major-specific pathways within the degree, minimum credits for categories within the degree, as well as the total, vary. Refer to the Program (Degree) Search at curriculum.maricopa.edu for credit minimums for major-specific pathways within the degree. The following websites identify the courses that apply to the different General Education Core and Awareness Areas: AGEC-A and the AGEC matrix. Courses available for both Areas during a current or upcoming semester can also be found using the “Find A Class” tool on maricopa.edu and on each MCCCD college’s website.

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Program Prerequisites.</strong></td>
<td>Number varies</td>
</tr>
<tr>
<td>Program prerequisites vary by type of Associate in Arts degree, and are not required for the non-major-specific version of the degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways within the degree.</td>
<td></td>
</tr>
<tr>
<td><strong>II. Required Courses.</strong></td>
<td>Number varies</td>
</tr>
<tr>
<td>Required (major-specific) courses vary by type of Associate in Arts degree, and are not required for the non-major-specific version of the degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways within the degree.</td>
<td></td>
</tr>
</tbody>
</table>
Maricopa Community Colleges (MCCCDD) 2019-2020 Associate in Arts (AA) Degree

III. Restricted Electives

Restricted electives vary by type of Associate in Arts degree, and are not required for the non-major-specific version of the degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways within the degree.

IV. Arizona General Education Curriculum—Arts (AGEC-A)

The AGEC-A requires a minimum of 35 credits, however, prerequisite/required/restricted elective courses may also meet AGEC-A requirements and credits count once toward the total for the degree. Therefore, the AGEC-A may be met with fewer than 35 credits as long as all requirements listed in this section (IV) are completed.

A. Core Areas:

Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area, Required Course(s) or Restricted Elective(s). AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course's value(s) in the semester it is taken.

1. First-Year Composition [FYC]

   - ENG101 OR ENG107 (3 credits)
   - AND ENG102 OR ENG108 (3 credits)

2. Literacy and Critical Inquiry [L]

   - COM100 [SB] Introduction to Human Communication OR
   - COM110 [SB] Interpersonal Communication OR
   - COM225 [L] Public Speaking

3. Mathematical Applications [MA]

   - Requires a course in college mathematics (MAT140, MAT141, MAT142, MAT145, MAT146) or college algebra (MAT150, MAT151, MAT152, MAT155, MAT156) or pre-calculus (MAT187) or higher (MA)-approved general education course.


   - 3 credits

5. Humanities, Arts and Design [HU]

   - 6 credits

6. Social-Behavioral Sciences [SB]

   - 6 credits

7. Natural Sciences [SQ/SG]

   - The lecture courses selected for Natural Sciences must include or be accompanied by the corresponding laboratory courses for a total of four credits each. Credits for lecture and lab components may be combined or each may carry separate credit. At least four credits must be designated as SQ/Science Quantitative. Eight credits of SG-Science General will not satisfy this requirement.

   - 8 credits

B. Awareness Areas

Some courses may be used to satisfy both a Core Area and one or more Awareness Area(s). (See AGEC matrix for current course values.)

1. Cultural Diversity in the United States [C]

   - 6 credits

2. Global Awareness [G] OR Historical Awareness [H]

   - 6 credits

V. MCCCD Additional Requirements

As noted below, courses in this area may also be applied toward AGEC-A Core Area requirements.

A. Oral Communication

   - COM100 [SB] Introduction to Human Communication OR
   - COM110 [SB] Interpersonal Communication OR
   - COM225 [L] Public Speaking OR
   - COM250 [SB] Small Group Communication (3 credits)

B. Critical Reading

   - CRE101 [L] Critical Reading OR equivalent as indicated by assessment

Students may demonstrate proficiency through assessment.

VI. General Electives

Select courses 100-level or higher if needed to complete a minimum of 60 semester credits but no more than a total of 64 semester credits, which is the maximum number of credits accepted toward most degree programs at Arizona’s public universities. Ideally, students should select courses that meet requirements for their major/area of interest and transfer institution. See General Associate Degree Academic Policies for further details, limitations, and guidelines.

Maricopa courses and external courses evaluated as Maricopa equivalents, departmental electives (e.g., HISELC for a history elective), or general electives (GENELC) that are numbered 100 level or higher, and completed with a grade of “C” or higher, may be applied in the elective area, regardless of potential transferability to other institutions. It is recommended, however, that students planning to transfer to a baccalaureate-granting institution meet these general elective requirements with courses that are transferable and applicable to their intended university degree. Transfer and major guides are accessible on the following websites: aztransfer.com, maricopa.edu/transfer/partners, as well as those of individual universities. For appropriate course selection, students should consult with an academic advisor.

TOTAL

60-64*
### III. Restricted Electives

Restricted electives vary by type of Associate in Arts degree, and are not required for the non-major-specific version of the degree. Refer to the Program (Degree) Search at maricopa.edu for specific courses and credit minimums required for major-specific pathways within the degree.

**Number varies**

### IV. Arizona General Education Curriculum—Arts (AGEC-A)

The AGECA requires a minimum of 35 credits, however, prerequisite/required/restricted elective courses may also meet AGECA requirements and credits count once toward the total for the degree. Therefore, the AGECA may be met with fewer than 35 credits as long as all requirements listed in this section (IV) are completed.

#### A. Core Areas:

- **First-Year Composition [FYC]**
  - ENG101 OR ENG107 (3 credits)
- **Literacy and Critical Inquiry [L]**
  - 3 credits
- **Mathematical Applications [MA]**
  - 3 credits
- **Social-Behavioral Sciences [SB]**
  - 6 credits
- **Natural Sciences [SQ/SG]**
  - 8 credits

#### B. Awareness Areas:

- **Cultural Diversity in the United States [C]**
  - (6-3 credits)
- **Global Awareness [G]** OR Historical Awareness [H]
  - (6-3 credits)

#### C. Restricted Electives

As noted below, courses in this area may also be applied toward AGECA Core Area requirements.

- **Oral Communication**
  - COM100 (3 credits)
- **Critical Reading**
  - CRE101 (3 credits)

#### D. Electives

Select courses 100-level or higher if needed to complete a minimum of 60 semester credits but no more than a total of 64 semester credits, which is the maximum number of credits accepted toward most degree programs at Arizona’s public universities. Ideally, students should select courses that meet requirements for their major/area of interest and transfer institution. See General Associate Degree Academic Policies for further details, limitations, and guidelines.

### VI. General Electives

*64 semester credits is the maximum accepted toward most degree programs at Arizona’s public universities. Some exceptions apply; consult with an academic advisor for additional transfer pathways.

**TOTAL**

60-64

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**Note:**

Maricopa courses and external courses evaluated as Maricopa equivalents, departmental electives (e.g., HISELC for a history elective), or general electives (GENELC) that are numbered 100 level or higher, and completed with a grade of “C” or higher, may be applied in the elective area, regardless of potential transferability to other institutions. It is recommended, however, that students planning to transfer to a baccalaureate-granting institution meet these general elective requirements with courses that are transferable and applicable to their intended university degree. Transfer and major guides are accessible on the following websites: aztransfer.com, maricopa.edu/transfer/partners, as well as those of individual universities. For appropriate course selection, students should consult with an academic advisor.
Maricopa Community Colleges (MCCCD) 2019-2020 Associate in Arts, Elementary Education (AAEE) Degree

Description
The Maricopa County Community College District Associate in Arts, Elementary Education degree requires a minimum of 60 semester credits for the program of study. A minimum grade point average of 2.0 and grades of "C" or higher are required to earn the degree. The Associate in Arts, Elementary Education degree is governed by the MCCCD General Academic Policies for Transfer Degrees.

The Associate in Arts, Elementary Education degree includes the following components:
I. Required Courses
II. Restricted Electives
III. Arizona General Education Curriculum for Arts (AGEC-A)
IV. MCCCD Additional Requirements (Oral Communication and Critical Reading)

Purpose of the Degree
The AAEE is designed for the student who plans to transfer to an Elementary Education, Early Childhood, Multicultural/Multilingual, or Special Education program at an Arizona public higher education institution and/or who plans to become a classroom instructional aide. Generally, the degree transfers as a block without loss of credit to Arizona's public universities, and in most cases, its required courses apply to graduation requirements for these Education majors.

Degree Requirements
The requirements for the Associate in Arts in Elementary Education follow. The following websites identify the courses that apply to the different General Education Core and Awareness Areas: AGEC-A and the AGEC matrix. Courses available for both Areas during a current or upcoming semester can also be found using the “Find A Class” tool on maricopa.edu and on each MCCCD college’s website.

Requirements
Credits

I. Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDU221 Introduction to Education</td>
<td>(3)</td>
</tr>
<tr>
<td>EDU222 Introduction to the Exceptional Learner</td>
<td>(3)</td>
</tr>
<tr>
<td>EDU230 Cultural Diversity in Education</td>
<td>(3)</td>
</tr>
<tr>
<td>MAT256 Investigating Quantity: Number, Operations, and Numeration Systems</td>
<td>(4)</td>
</tr>
<tr>
<td>MAT257 Investigating Geometry, Probability, and Statistics</td>
<td>(4)</td>
</tr>
<tr>
<td>ENG101 OR ENG107</td>
<td>(3)</td>
</tr>
<tr>
<td>Select one additional EDU course (other than EDU221, EDU222, EDU230 or EDU250)</td>
<td>(3)</td>
</tr>
</tbody>
</table>

II. Restricted Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EED215 Early Learning: Health, Safety, Nutrition and Fitness</td>
<td>(3)</td>
</tr>
<tr>
<td>EDU221 Introduction to Serving English Language Learners (ELL)</td>
<td>(3)</td>
</tr>
<tr>
<td>EDU222 Introduction to Serving English Language Learners (ELL)</td>
<td>(3)</td>
</tr>
<tr>
<td>EDU230 Cultural Diversity in Education</td>
<td>(3)</td>
</tr>
<tr>
<td>MAT256 Investigating Quantity: Number, Operations, and Numeration Systems</td>
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</tr>
<tr>
<td>Select one additional EDU course (other than EDU221, EDU222, EDU230 or EDU250)</td>
<td>(3)</td>
</tr>
</tbody>
</table>

III. Arizona General Education Curriculum--Arts (AGEC-A)

The AGEC-A requirements of 35 credits, however, prerequisite/required/restricted elective courses may also meet AGEC-A requirements and credits count once toward the total for the degree. Therefore, the AGEC-A May be met with fewer than 35 credits as long as all requirements listed in this section (III) are completed.

A. Core Areas

Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area, Required Course(s) or Restricted Elective(s). AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course's value(s) in the semester it is taken.

1. First-Year Composition [FYC]                                       | 6
   ENG101 OR ENG107                                                   | (3)
   AND ENG102 OR ENG108                                              | (3)

2. Literacy and Critical Inquiry [L]                                  | 3
   COM225 Public Speaking                                            | (3)

3. Mathematical Applications [MA]                                    | 3-6
   Requires a course in college mathematics (MAT140, MAT141, MAT142, MAT145, MAT146) or college algebra (MAT150, MAT151, MAT152, MAT155, MAT156) or pre-calculus (MAT187) or any other [MA] designated course for which college algebra is a pre-requisite. (Note that MAT256, MAT257, MAT182, and MAT206 are excluded)
   Computer/Statistics/Quantitative Applications [CS]                | 3
   BPC110 Computer Usage and Applications OR                         | (3)
   CIS105 Survey of Computer Information Systems                     | (3)
   Humanities, Arts and Design [HU]                                  | 6

Maricopa Community Colleges (MCCCD) 2019-2020 Associate in Arts, Elementary Education (AAEE) Degree
### Degree Requirements

The requirements for the Associate in Arts in Elementary Education follow. The following websites identify the courses available for both Areas during a current or upcoming semester can also be found using the “Find A Class” tool on maricopa.edu and on each MCCCd college’s website.

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDU221</td>
<td>Introduction to Education</td>
<td>(3)</td>
</tr>
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<td>EDU222</td>
<td>Introduction to the Exceptional Learner</td>
<td>(3)</td>
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<td>EDU230</td>
<td>Cultural Diversity in Education</td>
<td>(3)</td>
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<td>MAT256</td>
<td>Investigating Quantity: Number, Operations, and Numeration Systems</td>
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</tr>
<tr>
<td>MAT257</td>
<td>Investigating Geometry, Probability, and Statistics</td>
<td>(4)</td>
</tr>
</tbody>
</table>

#### Restricted Electives

A total of 8 semester credits is required to satisfy the Electives for Arizona Professional Teacher Standards: 3 credits in an additional Education course and 5 credits in Content Area Electives, as outlined below.

Courses must transfer to all public Arizona universities as elective credit, departmental elective, or equivalent to a university course as indicated in the Arizona Course Equivalency Guide. Elective courses identified as non-transferable in the Arizona Course Equivalency Guide cannot be used to satisfy this requirement.

Select one additional EDU course (other than EDU221, EDU222, EDU230 or EDU250)..... (3) Recommended:
- EDU110: Education in Film
- EDU220: Introduction to Serving English Language Learners (ELL)
- EDU236: Classroom Relationships
- EDU/HUM/STO292: The Art of Storytelling

Choose any combination from the following list of courses and prefixes to total 5 credits of additional coursework. Course(s) selected must be different from those used to fulfill a

### III. Arizona General Education Curriculum—Arts (AGEC-A)

The AGEC-A requires a minimum of 35 credits, however, prerequisite/required/restricted elective courses may also meet AGEC-A requirements and credits count once toward the total for the degree. Therefore, the AGEC-A may be met with fewer than 35 credits as long as all requirements listed in this section (III) are completed.

#### Core Areas

- **A: Core Area**
  - Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G], and/or [H] requirement(s) as well as their respective Core Area. Required Course(s) or Restricted Elective(s) AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree.
  - For AGEC-A matrix for each course’s value(s) in the semester it is taken.
  - First-Year Composition [FYC] (6)
  - ENG101 OR ENGL107 (3)
  - Literacy and Critical Inquiry [L]-COM225 Public Speaking (3)
  - Mathematical Applications [MA] (3-6)
  - Requires a course in college mathematics (MAT140, MAT141, MAT142, MAT145, MAT146) or college algebra (MAT150, MAT151, MAT152, MAT155, MAT156) or pre calculus (MAT187) or any other [MA] designated course for which college algebra is a pre-requisite.
  - (Note that MAT256, MAT257, MAT182, and MAT206 are excluded)
  - Computer/Statistics/Quantitative Applications [CS] (3)
  - BPC110 Computer Usage and Applications OR CIS105 Survey of Computer Information Systems (6)
  - Humanities, Arts and Design [HU] (3)

### Maricopa Community Colleges (MCCCd)

#### 2019-2020 Associate in Arts, Elementary Education (AAEE) Degree

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Required Courses</td>
<td>17</td>
</tr>
<tr>
<td>II. Restricted Electives</td>
<td>8</td>
</tr>
<tr>
<td>III. Arizona General Education Curriculum—Arts (AGEC-A)</td>
<td>35-44</td>
</tr>
</tbody>
</table>
Maricopa Community Colleges (MCCCD)
2019-2020 Associate in Arts, Elementary Education (AAEE) Degree

Natural Sciences [SQ/SG]

Note that some of these courses also have Awareness Areas designations (see section 2 below) and can be used to satisfy [G] and/or [H] requirement as well as [HJ] (AGEC designations are subject to change. See AGEC matrix for each course's value(s) in the semester it is taken.)

1) Select one of the following ARH, DAH, MHL or THE courses:

   ARH100 Introduction to Art OR
   ARH101 Prehistoric through Gothic Art OR
   ARH102 Renaissance through Contemporary Art OR
   DAH100 Introduction to Dance OR
   DAH201 World Dance Studies OR
   DAH250 Dance in Popular Culture OR
   MHL140 Survey of Music History OR
   MHL145 American Jazz and Popular Music OR
   MHL146 Survey of Broadway Musicals OR
   MHL153 Rock Music and Culture OR
   THE111 Introduction to Theatre OR
   THE220 Modern Drama
   
   AND

2) Select one of the following EDU, ENH or HUM courses:

   EDU100 Social Responsibility of the Consumer OR
   EDU101 Introduction to Education OR
   ENH241 American Literature Before 1865 OR
   ENH242 American Literature After 1865 OR
   HUM250 Ideas and Values in the Humanities OR
   HUM251 Ideas and Values in the Humanities

6. Social-Behavioral Sciences [SB]

Note that some of these courses also have Awareness Areas designations (see section 2 below) and can be used to satisfy [G] and/or [H] requirement as well as [SB]. (AGEC designations are subject to change. See AGEC matrix for each course's value(s) in the semester it is taken.)

1) Select one of the following US History/Government courses:

   HIS103 United States History to 1865 OR
   POS110 American National Government OR
   GCU/POS113 United States and Arizona Social Studies

   AND

2) Select one of the following CFS, ECH, GCU, ECN, HIS or PSY courses:

   CFS205 Human Development OR
   ECH/CSFS176 Child Development OR
   GCU121 World Geography I: Eastern Hemisphere OR
   GCU122 World Geography II: Western Hemisphere OR
   ECN211 Macroeconomic Principles OR
   ECN212 Microeconomic Principles OR
   HIS104 United States History 1865 to Present OR
   PSY101 Introduction to Psychology

7. Natural Sciences [SQ/SG]

The lecture courses selected for Natural Sciences must include or be accompanied by the corresponding laboratory course for a total of 4 credits each. At least four (4) credits must be designated as SQ. Eight (8) credits of SG will not satisfy this requirement.

1) Life Sciences: Select four (4) credits of SQ in Biology (BIO) from the following courses:

   BIO100 Biology Concepts

TOTAL............................................................................................................................................. 0-3

IV. MCCCD Additional Requirements

As noted below, courses in this area may also be applied toward AGEC-A Core Area requirements.

A. Oral Communication.

   Met by COM225 in Required Courses.

B. Critical Thinking.

   Students may demonstrate proficiency through assessment.

   CRE101 [L] Critical Reading OR equivalent as indicated by assessment

TOTAL............................................................................................................................................. 0-3

**NOTE: State certification requirements include courses on the constitutions of US and Arizona. Taking GCU/POS113 for [SB] fulfills this requirement completely. Students who instead take HIS103 or POS110 for [SB] should consider taking POS221 as a Content Area Elective so they have completed study of both constitutions. POS220 meets state certification requirements for both constitutions but does not meet [SB].**

**64 semester credits is the maximum accepted toward most degree programs at Arizona’s public universities. Some exceptions apply, consult with an academic advisor for additional transfer pathways.**
Maricopa Community Colleges (MCCCD)
2019-2020 Associate in Arts, Elementary Education (AAEE) Degree

Note that some of these courses also have Awareness Areas designations (see section 2 below) and can be used to satisfy [G] and/or [H] requirement as well as [HU]. (AGEC designations are subject to change. See AGEC matrix for each course's value(s) in the semester it is taken.)

1. Select one of the following ART, DAH, MHL or THE courses:................. (3)
   ARH100 Introduction to Art OR
   ARH101 Prehistoric through Gothic Art OR
   ARH102 Renaissance through Contemporary Art OR
   DAH100 Introduction to Dance OR
   DAH201 World Dance Studies OR
   DAH250 Dance in Popular Culture OR
   MHL140 Survey of Music History OR
   MHL145 American Jazz and Popular Music OR
   MHL146 Survey of Broadway Musicals OR
   MHL153 Rock Music and Culture OR
   THE111 Introduction to Theatre OR
   THE220 Modern Drama

AND

2. Select one of the following EDU, ENH or HUM courses:......................... (3)
   EDU159E291 Children’s Literature (Recommended) OR
   EDU199 Introduction to Literature OR
   EDU211 American Literature Before 1860 OR
   ENH241 American Literature After 1860 OR
   ENH242 American Literature After 1860 OR
   HUM250 Ideas and Values in the Humanities OR
   HUM251 Ideas and Values in the Humanities


Note that some of these courses also have Awareness Areas designations (see section 2 below) and can be used to satisfy [G] and/or [H] requirement as well as [SB]. (AGEC designations are subject to change. See AGEC matrix for each course's value(s) in the semester it is taken.)

1) Select one of the following US History/Government courses*..................... (3)
   These courses satisfy the United States Constitution requirement for state teacher certification.
   HIS103 United States History to 1865 OR
   POS110 American National Government OR
   GCU/POS113 United States and Arizona Social Studies

AND

2) Select one of the following CFS, ECH, GCU, ECN, HIS or PSY courses... (3)
   CFS200 Human Development OR
   ECH/CFS176 Child Development OR
   GCU121 World Geography I: Eastern Hemisphere OR
   GCU122 World Geography II: Western Hemisphere OR
   ECN211 Macroeconomic Principles OR
   ECN212 Microeconomic Principles OR
   HIS104 United States History to 1865 to Present OR
   PSY101 Introduction to Psychology

7. Natural Sciences [SQ/SG] ........................................................................ (8)

The lecture courses selected for Natural Sciences must include or be accompanied by the corresponding laboratory course for a total of 4 credits each. At least four (4) credits must be designated as SQ. Eight (8) credits of SG will not satisfy this requirement.

1) Life Sciences: Select four (4) credits in Biology (BIO) from the following courses: (4)
   BIO100 Biology Concepts
   BIO101 Introduction to Human Genetics for Non-Majors
   BIO102 Cells to Systems: An Introduction to Biology for Non-Majors
   BIO105 Environmental Biology
   BIO107 Introduction to Biotechnology
   BIO108 Plants and Society
   BIO156 Introductory Biology for Allied Health
   BIO156X Introductory Biology for Allied Health
   BIO181 General Biology (Majors) I
   BIO241 Human Genetics

AND

2) Physical Sciences or Earth/Space Sciences: Select four (4) credits of SQ OR SG from one of the following prefixes:................................. (4)
   AGS, ASM, ASTM, CHM, GPH, GLG, GHS, or PHY

Note: Students are advised to check with the university they plan to attend as specific requirements for lab sciences may vary.

0-3

B. Awareness Areas.......................................................... (0)
   1. Cultural Diversity in the United States [C]............................................... (0)
      Met by EDU222 and EDU230 in Required Courses. (0-3)
   2. Global Awareness [G] OR Historical Awareness [H]............................. (0-3)
      May be met by [HU] and/or [SB] course depending on specific courses selected. (0-3)
      (AGEC designations are subject to change. See AGEC matrix for each course's value(s) in the semester it is taken.)

IV. MCCCD Additional Requirements ................................................................................. (0-3)

As noted below, courses in this area may also be applied toward AGEC-A Core Area requirements.

A. Oral Communication................................................................................. (0)
   Met by COM225 in Required Courses. (0)

B. Critical Reading....................................................................................... (0-3)
   Students may demonstrate proficiency through assessment.
   CRE101 [L] Critical Reading OR equivalent as indicated by assessment

TOTAL: 60-68**

*NOTE: State certification requirements include courses on the constitutions of US and Arizona. Taking GCU/POS113 for [SB] fulfills this requirement completely. Students who instead take HIS103 or POS110 for [SB] should consult the content area electives to see if they have completed study of both constitutions. POS220 meets state certification requirements for both constitutions but does not meet [SB].

**64 semester credits is the maximum accepted toward most degree programs at Arizona’s public universities. Some exceptions apply; consult with an academic advisor for additional transfer pathways.
The Associate in Arts, Fine Arts (AAFA) degree, including major-specific pathways within the degree, is governed by the Maricopa County Community College District General Academic Policies for Transfer Degrees.

The Associate in Arts, Fine Arts degree includes the following components:

I. Program Prerequisites (if applicable)
II. Required Courses (for major-specific pathway versions-Art, Dance, Music, Theatre)
III. Restricted Electives (for major-specific pathway versions-Art, Dance, Music, Theatre)
IV. Arizona General Education Curriculum for Arts (AGEC-A)
V. MCCCD Additional Requirements (Oral Communication and Critical Reading)
VI. General Electives (if needed to reach minimum credits for degree)

Purpose of the Degree

The Associate in Arts, Fine Arts (AAFA) degree is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors in the Fine Arts. The degree is designed to prepare students to meet selective admission criteria for programs such as the Bachelor of Fine Arts, which may require a portfolio or performance requirement.

In most cases, courses used to satisfy the MCCCD Associate in Arts, Fine Arts (AAFA) will apply to general university graduation requirements. However, students need to pay attention to any specific requirements of their intended focus at the university to be sure they select courses that will meet them. Information regarding the articulation of the AAFA degree with majors at the Arizona public universities can be accessed via the following website: www.aztransfer.com

Degree Requirements

The requirements for the Associate in Arts, Fine Arts follow. All versions of the Associate in Arts, Fine Arts require a minimum of 60 credits; for major-specific pathway versions (Art, Dance, Music, Theatre) of the Associate in Arts, Fine Arts degree vary. Refer to the Program (Degree) Search at curriculum.maricopa.edu for credit minimums for individual degree programs. A minimum grade point average of 2.0 and grade of "C" or higher are required to earn the degree.

The Associate in Arts, Fine Arts degree requires a minimum of 60 semester credits for the program of study; minimum total credits for major-specific pathways (Art, Dance, Music, Theatre) of the Associate in Arts, Fine Arts degree vary. Refer to the Program (Degree) Search at curriculum.maricopa.edu for credit minimums for individual degree programs. A minimum grade point average of 2.0 and grade of "C" or higher are required to earn the degree.

The requirements for the Associate in Arts, Fine Arts are as follows. All versions of the Associate in Arts, Fine Arts require a minimum of 60 credits; for major-specific pathway versions (Art, Dance, Music, Theatre) of the Associate in Arts, Fine Arts degree vary. Refer to the Program (Degree) Search at curriculum.maricopa.edu for credit minimums for major-specific pathways within the degree.

The following requirements are listed as credits earned. At least 6 credits must be designated as SQ-Science and 6 credits must be designated as SQ-Social Science. Specific courses may be used to satisfy both the General Education Core and Awareness Areas. Students should refer to their specific course work from more than one discipline.

I. Program Prerequisites

Program prerequisites may vary by type of Associate in Arts, Fine Arts degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways (Art, Dance, Music, Theatre) within the degree.

II. Required Courses

Required major-specific courses may vary by type of Associate in Arts, Fine Arts degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways (Art, Dance, Music, Theatre) within the degree.

III. Restricted Electives

Restricted Elective(s). AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. All AGEC courses are numbered in pairs: the first number denotes the AGEC area; the second number denotes the Core Area and/or [H] requirement(s) as well as their respective Core Area, Required Course(s) or Restricted Elective(s). AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course's value(s) in the semester it is taken.

   1. First-Year Composition [FYC]
      a. ENG101 OR ENG107 ............................................. (3) and ENG102 OR ENG108 ............................................. (3)
      b. 2. Literacy and Critical Inquiry [L] ......................... (3)
      3. Mathematical Applications [MA] .......................... (3-6)
         Requires a course in college mathematics (MAT140, MAT141, MAT142, MAT145, MAT146) or college algebra (MAT150, MAT151, MAT152, MAT155, MAT156) or pre-calculus (MAT187) or higher [MA]-approved general education course.
      c. Computer/Statistics/Quantitative Applications [CS] .... (3)
      4. Humanities, Arts and Design [HU] ........................ (3)
         Major specific pathways for the AAFA will specify courses to be taken to fulfill the Humanities, Arts and Design area. Students should refer to their specific course work from more than one discipline.
      5. Natural Sciences [SQ/SG] ................................. (6)
         The lecture courses selected for Natural Sciences must include or be accompanied by the corresponding laboratory courses for a total of four credits each. Credits for lecture and lab components may be combined or each may carry separate credit. At least four credits must be designated as SQ-Science/Quantitative. Eight credits of SQ-Science General will not satisfy this requirement.
      Students are encouraged to choose course work from more than one discipline.
   7. Art or Design [AD] .............................................. (3)

IV. Arizona General Education Curriculum—Arts (AGEC-A)

The AGEC-A requires a minimum of 35 credits. However, prerequisite/required/restricted
effective courses may meet also AGEC-A requirements and credits count once toward the total
for the degree. Therefore, the AGEC-A may be met with fewer than 35 credits as long as all
requirements listed in this section (IV) are completed.

   A. Core Areas
      Some courses may be met by Required Courses or Restricted Electives. Some of these
courses also have Awareness Area designations and can be used to satisfy [C], [G]
and/or [H] requirement(s) as well as their respective Core Area, Required Course(s) or
Restricted Elective(s). AGEC designations are subject to change. Courses may meet
more than one requirement but are only counted once toward the total credits for the
degree. See AGEC matrix for each course's value(s) in the semester it is taken.

      1. First-Year Composition [FYC]
         a. ENG101 OR ENG107 ............................................. (3)
            AND ENG102 OR ENG108 ............................................. (3)
         b. 2. Literacy and Critical Inquiry [L] ......................... (3)
         3. Mathematical Applications [MA] .......................... (3-6)
            Requires a course in college mathematics (MAT140, MAT141, MAT142, MAT145, MAT146) or college algebra (MAT150, MAT151, MAT152, MAT155, MAT156) or pre-calculus (MAT187) or higher [MA]-approved general education course.
         c. Computer/Statistics/Quantitative Applications [CS] .... (3)
         d. Humanities, Arts and Design [HU] ........................ (3)
         e. Natural Sciences [SQ/SG] ................................. (6)
         f. Social-Behavioral Sciences [SB] ............................... (3)
            Students are encouraged to choose course work from more than one discipline.

V. MCCCD Additional Requirements

As noted below, courses in this area may also be applied toward AGEC-A Core Area
requirements.

   A. Oral Communication
      a. COM100 [SH] Introduction to Human Communication OR
         COM110 [SH] Interpersonal Communication OR
         COM225 [L] Public Speaking OR
         COM230 [SB] Small Group Communication (3 credits) OR
         COM100AA & COM100AB & COM100AC [SH] (3 credits) OR
         COM101AA & COM101AB & COM101AC [SH] (3 credits)
Purpose of the Degree

The Maricopa County Community College District Associate in Arts, Fine Arts degree requires a minimum of 60 semester credits for the program's degree. Minimum total credits for major-specific pathway versions (Art, Dance, Music, Theatre) of the Associate in Arts, Fine Arts degree vary. Refer to the Program (Degree) Search at curriculum.maricopa.edu for credit minimums for individual degree programs. A minimum grade point average of 2.0 and grades of "C" or higher are required to earn the degree. The Associate in Arts, Fine Arts degree, including major-specific pathways within the degree, is governed by the Maricopa General Academic Policies for Transfer Degrees.

The Associate in Arts, Fine Arts degree includes the following components:
I. Program Prerequisites (if applicable)
II. Required Courses (for major-specific pathway versions-Art, Dance, Music, Theatre)
III. Restricted Electives (for major-specific pathway versions-Art, Dance, Music, Theatre)
IV. Arizona General Education Curriculum for Arts (AGEC-A)
V. MCCCD Additional Requirements (Oral Communication and Critical Reading)
VI. General Electives (if needed to reach minimum credits for degree).

Program Prerequisites

Program prerequisites vary by type of Associate in Arts, Fine Arts degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways (Art, Dance, Music, Theatre) within the degree.

Required Courses (for major-specific pathway versions-Art, Dance, Music, Theatre)

Restricted Electives

Restricted electives vary by type of Associate in Arts, Fine Arts degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways (Art, Dance, Music, Theatre) within the degree.

Arizona General Education Curriculum—Arts (AGEC-A)

The AGEC-A requires a minimum of 35 credits. However, prerequisite/required/restricted elective courses may also meet AGEC-A requirements and credits count once toward the total for the degree. Therefore, the AGEC-A may be met with fewer than 35 credits as long as all requirements listed in this section (IV) are completed.

A. Core Areas

Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Awareness Area designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area, Required Course(s) or Restricted Elective(s). AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course's values(s) in the semester it is taken.

1. First-Year Composition [FYC].......................................................... (3)

2. Literacy and Critical Inquiry [L].................................................... (3)

3. Mathematical Applications [MA]............................................... (3)

4. A course in college mathematics (MAT140, MAT141, MAT142, MAT145, MAT146) or college algebra (MAT150, MAT151, MAT152, MAT155, MAT156) or pre-calculus (MAT187) or higher [MA] approved general education course.

5. Humanities, Arts and Design [HU]............................................ (3)

6. Restricted Elective(s). AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course's values(s) in the semester it is taken. A course in college mathematics (MAT140, MAT141, MAT142, MAT145, MAT146) or college algebra (MAT150, MAT151, MAT152, MAT155, MAT156) or pre-calculus (MAT187) or higher [MA] approved general education course.

V. MCCCD Additional Requirements

As noted below, courses in this area may also be applied toward AGEC-A Core Area requirements.

A. Oral Communication .............................................................. (0-3)

COM100 [SB] Introduction to Human Communication OR
COM101 [SB] Interpersonal Communication OR
COM225 [L] Public Speaking OR
COM230 [SB] Small Group Communication (3 credits) OR
COM100AA & COM100AB & COM100AC [SB] (3 credits) OR
COM100AA & COM100AB & COM100AC [SR] (3 credits)

Center for Curriculum and Transfer Articulation, June 25, 2019
Funding Governing Board Approval, August 27, 2019
### General Electives

**B. Critical Reading**

- **Description**: Students may demonstrate proficiency through assessment.
- **Credit Hours**: 0-3

### Purpose of the Degree

The Maricopa County Community College District Associate in Applied Science (AAS) degree is recommended for students who wish to gain a depth of technical expertise in a particular workforce-related area of study. The AAS degree options vary at the different MCCCD colleges and can be searched alphabetically or by field of interest.

### Academic Policies that Govern the AAS degree

- Requires at least 12 semester credit hours earned at the college awarding the AAS degree. The 12 hours in the AAS degree curricula may be in the Required Courses area and/or Restricted Electives courses. Courses from the General Education Core and Distribution area are excluded.
- Requires grades as listed for specific areas such as the General Education Core where a minimum grade of "C" is required. See specific AAS occupational degree for specific program grade requirements.
- Requires completion of General Education Core and Distribution areas.
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- Requires completion of General Education Core and Distribution areas.
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- Requires completion of General Education Core and Distribution areas.

### Distribution Area

**Listed Here (Excluding the AAS degree curricula)**

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-2020</td>
<td>Associate in Art, Fine Arts (AAFA) – Art, Dance, Music, Theatre</td>
</tr>
<tr>
<td>2019-2020</td>
<td>Associate in Applied Science (AAS) Degree and General Education Requirements</td>
</tr>
</tbody>
</table>

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*64 semester credits is the maximum accepted toward most degree programs at Arizona’s public universities. Some exceptions apply; consult with an academic advisor for additional transfer pathways.*
B. Critical Reading…………………………………………………………………………………………………... (0-3)
Students may demonstrate proficiency through assessment.

CRE101 [L] Critical Reading OR equivalent as indicated by assessment

VI. General Electives……………………………………………………………………………………………………. 8-25

Select courses 100-level or higher if needed to complete a minimum of 60 semester credits but no more than a total of 64 semester credits, which is the maximum number of credits accepted toward most degree programs at Arizona’s public universities. Ideally, students should select courses that meet requirements for their major/area of interest and transfer institution. See General Associate Degree Academic Policies for further details, limitations, and guidelines.

Maricopa courses and external courses evaluated as Maricopa equivalents, departmental electives (e.g., HISELC for a history elective), or general electives (GENELC) that are numbered 100 level or higher, and completed with a grade of “C” or higher, may be applied in the elective area, regardless of potential transferability to other institutions. It is recommended, however, that students planning to transfer to a baccalaureate-granting institution meet these general elective requirements with courses that are transferable and applicable to their intended university degree. Transfer and major guides are accessible on the following websites: i3transfer.com, maricopa.edu/transfer-pathways, as well as those of individual universities. For appropriate course selection, students should consult with an academic advisor.

TOTAL…………………………………………………………………………………………………………………………. 60-64*

*64 semester credits is the maximum accepted toward most degree programs at Arizona’s public universities. Some exceptions apply; consult with an academic advisor for additional transfer pathways.
COM Communication 100/100AA & 100AB & 100AC/110/110AA & 110AB & 110AC/225/230

Critical Reading (3 credits)

Oral Communication (3 credits)

ENG English [101/107] & [102/108/111]

Mathematics (3 credits)

MHL Music: History/Literature 140/143/145/146/153/155/158/241

HUM Humanities Any HUM course(s) (except 120, 225)

LAT Latin 201/202

INT Interior Design 115/120

HON Honors 190

COM Communication 101

CON Construction 106 (formerly CNS106)

CCS Chicana and Chicano Studies 200

CFS Child/Family Studies 112/157/163/205/206/210

CRF Critical Reading 111

ENG English 213

FOR Forensic Science 250

GPH Geology Any GPH course(s)

HIS History Any HIS course(s) (except 111, 170, 251, 252, 253, 254)

HUM Humanities Any HUM course(s) (except 120, 225)

LAT Latin 201/202

MHL Music History/Literature 140/143/145/146/155/158/204/241/242/245

PHI Philosophy Any PHI course(s)

REL Religious Studies Any REL Course(s)

SLC Studies in Language & Culture 201/202

SPA Spanish 241/242/260/266

SPH Spanish Humanities 241/245

SSH Sustainability/Social Sciences and Humanities 111

STO Storytelling 292/294

(continued in next column)
Description
The Maricopa County Community College District Associate in Business General Requirements (ABUS-GR) degree requires a minimum of 62 semester credits for the program of study. A minimum grade point average of 2.0 and grades of "C" or higher are required to earn the degree. The Associate in Business-General Requirements degree is governed by the Maricopa Community Colleges (MCCCD) General Academic Policies for Transfer Degrees.

This degree provides the first two years of a four-year curriculum for students who wish to specialize in business. For a comprehensive list of bachelor’s degrees at Arizona’s public universities, refer to the AZTransfer Business Matrix. With a bachelor’s degree, students may pursue a number of careers, including but not limited to accountancy, business administration, business data analytics, economics, entrepreneurship, finance, marketing, management, retail management, and supply chain management.

The Associate in Business-General Requirements degree includes the following components:

I. Required Courses
   II. Restricted Electives
   III. Arizona General Education Curriculum for Business (AGEC-B)
   IV. General Electives (if needed to reach minimum credits for degree)

Purpose of the Degree
The Associate in Business General Requirements (ABUS-GR) degree is designed for students who plan to transfer to four-year colleges and universities. In general, the components of this degree meet requirements for the various business majors (except Computer Information Systems) at Arizona’s public universities. Computer Information Systems majors should follow the Associate in Business Special Requirements (ABUS-SR) pathway instead. Generally, the degree transfers as a block without loss of credit to Arizona’s public universities and other institutions with district-wide articulation agreements.

Special Academic Policies that Govern the ABUS-GR Degree
- The ABUS-GR does not include any MCCCD Special Requirements for Oral Communication and/or Critical Reading like the other Associate degrees. However, some university programs have a speech requirement; consult your academic advisor or transfer guide to verify the specifics for your program.
- A single course can be used to satisfy multiple areas within the degree simultaneously; however, the components of this degree can not be used to satisfy both the ABUS-GR and an AGEC-B Core Area (AGEC-B Core Area and/or Area(s) of Concentration). Required Courses (Common Core Division Requirements), and/or Restricted Electives (Business Electives). Credits are counted according to the total for the degree.

Degree Requirements
The 62-72 semester credits required for the Associate in Business General Requirements follow. The following websites identify the courses that apply to the different General Education Core and Area(s) for Arizona General Education Curriculum (AGEC) and the AGEC Matrix. Courses available for both areas during a current or upcoming semester can also be found using the "Find a Class" tool on each MCCCD college’s website.

### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC211</td>
<td>Accounting Principles AND</td>
<td>3</td>
</tr>
<tr>
<td>ACC230</td>
<td>Uses of Accounting Information I AND</td>
<td>3</td>
</tr>
<tr>
<td>ACC240</td>
<td>Uses of Accounting Information II</td>
<td>3</td>
</tr>
<tr>
<td>ACC213</td>
<td>Financial Accounting AND</td>
<td>3</td>
</tr>
<tr>
<td>ACC215</td>
<td>Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACC211</td>
<td>Accounting Principles I AND</td>
<td>3</td>
</tr>
<tr>
<td>ACC212</td>
<td>Accounting Principles II AND</td>
<td>3</td>
</tr>
</tbody>
</table>

### Restricted Electives

- Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course's value(s) in the semester it is taken.

### Arizona General Education Curriculum - Business (AGEC-B)

The AGEC-B requires a minimum of 35 credits, however, Required and Restricted elective courses also may meet AGEC-B requirements and credits count once toward the total for the degree. Therefore, the AGEC-B may be met with fewer than 35 credits as long as all requirements listed in this section (III) are completed.

A. Core Areas

Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Area(s) designated. See AGEC matrix for each course's value(s) in the semester it is taken.

1. First-Year Composition (FYC).................................................................................. 6
Description

The Maricopa County Community College District Associate in Business General Requirements (ABUS-GR) degree requires a minimum of 62 semester credits for the program of study. A minimum grade point average of 2.0 and grades of "C" or higher are required to earn the degree. The Associate in Business-General Requirements degree is governed by the MCCCD General Academic Policies for Transfer Degrees.

This degree provides the first two years of a four-year curriculum for students who wish to specialize in business. For a comprehensive list of bachelor’s degrees at Arizona’s public universities, refer to the AZTransfer Business Matrix. With a bachelor’s degree, students may pursue a number of careers, including but not limited to accountancy, business administration, business data analytics, economics, entrepreneurship, finance, marketing, management, retail management, and supply chain management.

The Associate in Business-General Requirements degree includes the following components:

I. Required Courses
II. Restricted Electives
III. Arizona General Education Curriculum for Business (AGEC-B)
IV. General Electives (if needed to reach minimum credits for degree)

Purpose of the Degree

The Associate in Business General Requirements (ABUS-GR) degree is designed for students who plan to transfer to four-year colleges and universities. In general, the components of this degree meet requirements for the various business majors (except Computer Information Systems) at Arizona’s public universities. Computer Information Systems majors should follow the Associate in Business Special Requirements (ABUS-SR) pathway instead. Generally, the degree transfers as a block without loss of credit to Arizona’s public universities and other institutions with district-wide articulation agreements.

Special Academic Policies that Govern the ABUS-GR Degree

- The ABUS-GR does not include any MCCCD Special Requirements for Oral Communication and/or Critical Reading like the other Associate degrees. (However, some university programs have a speech requirement; consult your academic advisor or transfer guide to verify the specifics for your program.)
- A single course can be used to satisfy multiple areas within the degree simultaneously. (AGEC-B Core Area and/or Awareness Area(s), Required Courses (Common Lower Division Requirements), and/or Restricted Electives (Business Electives). Credits are counted once toward the total for the degree.

Degree Requirements

The 62- to 72-semester credits required for the Associate in Business General Requirements follow. The following websites identify the courses that apply to the different General Education Core and Awareness Areas: AGEC-B and the AGEC Matrix. Courses available for both areas during a current or upcoming semester can also be found using the “Find A Class” tool on each MCCCD college’s website.

Requirements

<table>
<thead>
<tr>
<th>Credits</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-25</td>
<td>I. Required Courses</td>
</tr>
<tr>
<td></td>
<td>Accounting</td>
</tr>
<tr>
<td>(6-9)</td>
<td>ACC111 Accounting Principles AND ACC230 Uses of Accounting Information I AND ACC240 Uses of Accounting Information II OR ACC315 Financial Accounting AND ACC212 Managerial Accounting OR ACC111 Accounting Principles I AND ACC112 Accounting Principles II AND ACC212 Managerial Accounting</td>
</tr>
</tbody>
</table>

Note:

Some of the following courses can be used to satisfy both this requirement and an AGEC-B Core Area. AGEC designations are subject to change. See AGEC matrix for each course’s value(s) in the semester it is taken.

Some courses may be used to satisfy both Restricted Elective and Arizona General Education Curriculum (AGEC) requirements, as indicated in [brackets] below, but two courses must be completed. AGEC designations are subject to change. See AGEC matrix for each course’s value(s) in the semester it is taken.

Select two courses (6 credits) from the following options:

- GBS151 Introduction to Business (Recommended) (3)
- GBS148 Excel Spreadsheet (3)
- CIS113DA Internet/Web Development Level I (3)
- GBS110 Human Relations in Business and Industry (3)
- MGT251 Human Relations in Business (3)
- GBS231 [L] Business Communication (3)
- MAT217 [SB] Quantitative Methods in Business I (3)
- MAT218 [SB] Quantitative Methods in Business II (3)
- IBS101 [G] Introduction to International Business (3)
- MOT253 Owning and Operating a Small Business (3)
- REA179 Real Estate Principles I (3)
- REA180 Real Estate Principles II (3)
- MKT271 Principles of Marketing (3)
- PAD100 21st Century Public Policy and Service (3)
- SBU250 [SB,G] Society and Business (3)

Select two courses (6 credits) from the following options:

- GBS111 [SB] Macroeconomic Principles (3)
- GBS112 [SB] Microeconomic Principles (3)
- GBS255 Legal, Ethical, and Regulatory Issues in Business (3)
- GBS231 Business Statistics (3)
- GBS220 [SB] Quantitative Methods in Business OR MAT217 or MAT218 Mathematical Analysis for Business Note: Students planning to attend ASU W. P. Carey School of Business will be required to take MAT217 or MAT218

III. Arizona General Education Curriculum - Business (AGEC-B)...

The AGEC-B requires a minimum of 35 credits; however, Required and Restricted elective courses may also meet AGEC-B requirements and credits count once toward the total for the degree. Therefore, the AGEC-B may be met with fewer than 35 credits as long as all requirements listed in this section (III) are completed.

A. Core Areas

Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G], and [H] requirement(s) as well as their respective Core Area, Required Course(s) or Restricted Elective(s). AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course’s value(s) in the semester it is taken.

1. First-Year Composition I [FYC] (3)

Pending Governing Board Approval, August 27, 2019
Maricopa Community Colleges (MCCCD) 2019-2020 Associate in Business, General Requirements (ABUS-GR) Degree

ENG101 OR ENGL07 AND.......................................................... (3)
ENG102 OR ENGL08................................................................. (3)
2. Literacy and Critical Inquiry [L].................................................. 3
3. Mathematical Applications [MA]............................................ (3-5)
MAT212 Brief Calculus OR
MAT213 Brief Calculus OR
Higher [MA] designated course
(3-5)
4. Computer/Statistics/Quantitative Applications [CS]............. 3
CIS105 Survey of Computer Information Systems
5. Humanities, Arts and Design [HU]........................................... 6
Students are encouraged to choose course work from more than one discipline.
6. Social-Behavioral Sciences [SB]............................................. 0
7. Natural Sciences [SQ/SG]......................................................... 8
The lecture courses selected for Natural Sciences must include or be accompanied by the corresponding laboratory courses for a total of four credits each. Credits for lecture and lab components may be combined or each may carry separate credit. At least four credits must be designated as SQ-Science Quantitative. Eight credits of SG-Science General will not satisfy this requirement.
B. Awareness Areas...........................................................................

0-6
Some courses may be used to satisfy both a Core Area and one or more Awareness Area(s). (See AGEC matrix for current course values.)
1. Global Diversity in the United States [C]
2. Global Awareness [G] OR Historical Awareness [H].............. (0-3)

(0-3)

(0-3)

Note: Students transferring to ASU in Accountancy should take two of the following courses: Sociology with [SB] value, Psychology with [SB] value, and COM230 or COM225. If students do not take these prior to transfer, they may need to take additional hours to meet ASU requirements.

IV. General Electives.............................................................................. 0-12
Select courses 100-level or higher if needed to complete a minimum of 62 semester credits, but no more than a total of 64 semester credits, which is the maximum number of credits accepted toward most degree programs at Arizona’s public universities. Ideally, students should select courses that meet requirements for their major/area of interest and transfer institution. See General Associate Degree Academic Policies for further details, limitations, and guidelines.

Maricopa courses and external courses evaluated as Maricopa equivalents, departmental electives (e.g., HISLEC for a history elective), or general electives (GENELEC) that are numbered 100 level or higher, and completed with a grade of “C” or higher, may be applied in the elective area, regardless of potential transferability to other institutions. It is recommended, however, that students planning to transfer to a baccalaureate-granting institution meet these general elective requirements with courses that are transferable and applicable to their intended university degree. Transfer advisement information is accessible on the following websites: gettransfer.com, curriculum.maricopa.edu, as well as those of individual universities.
For appropriate course selection, students should consult with an academic advisor.

TOTAL................................................................................. 62-72*

*64 semester credits is the maximum accepted toward most degree programs at Arizona’s public universities. Some exceptions apply; consult with an academic advisor for additional transfer pathways.
Maricopa Community Colleges (MCCCD) 2019-2020 Associate in Business, General Requirements (ABUS-GR) Degree

ENG101 OR ENG107 AND ENG102 OR ENG108 ................................................................. (3-3)
2. Literacy and Critical Inquiry [L] .................................................................................. 3
3. Mathematical Applications [MA] ................................................................................ (3-5)
   MAT212 Brief Calculus OR MAT213 Brief Calculus OR Higher [MA] designated course (3)
   (3-5)
5. Humanities, Arts and Design [HU] ............................................................................ 6
6. Social-Behavioral Sciences [SB] ................................................................................ 0
7. Natural Sciences [SQ/SG] .......................................................................................... 8
   The lecture courses selected for Natural Sciences must include or be accompanied by the corresponding laboratory courses for a total of four credits each. Credits for lecture and lab components may be combined or each may carry separate credit. At least four credits must be designated as SQ-Science Quantitative. Eight credits of SG-Science General will not satisfy this requirement.

B. Awareness Areas.................................................................................................... 0-6
   Some courses may be used to satisfy both a Core Area and one or more Awareness Area(s). (See AGEC matrix for current course values.)
   1. Global Cultural Diversity in the United States [C] .................................................. (0-3)
   2. Global Awareness [G] OR Historical Awareness [H] ................................................ (0-3)

Note: Students transferring to ASU in Accountancy should take two of the following courses: Sociology with [SB] value, Psychology with [SB] value, and COM230 or COM225. If students do not take these prior to transfer, they may need to take additional hours to meet ASU requirements.

IV. General Electives ........................................................................................................ 0-12
   Select courses 100-level or higher if needed to complete a minimum of 62 semester credits, but no more than a total of 64 semester credits, which is the maximum number of credits accepted toward most degree programs at Arizona’s public universities. Ideally, students should select courses that meet requirements for their major/area of interest and transfer institution. See General Associate Degree Academic Policies for further details, limitations, and guidelines.

Maricopa courses and external courses evaluated as Maricopa equivalents, departmental electives (e.g., HISELC for a history elective), or general electives (GENELEC) that are numbered 100 level or higher, and completed with a grade of "C" or higher, may be applied in the elective area, regardless of potential transferability to other institutions. It is recommended, however, that students planning to transfer to a baccalaureate-granting institution meet these general elective requirements with courses that are transferable and applicable to their intended university degree. Transfer advisement information is accessible on the following websites: gettransfer.com, curriculum.maricopa.edu, as well as those of individual universities. For appropriate course selection, students should consult with an academic advisor.

TOTAL ............................................................................................................................ 62-72*  

*64 semester credits is the maximum accepted toward most degree programs at Arizona’s public universities. Some exceptions apply; consult with an academic advisor for additional transfer pathways.
Maricopa County Community College District General Education Curriculum 2019-2020

Maricopa Community Colleges (MCCCD) 2019-2020 Associate in Business, Special Requirements (ABUS-SR) Degree

AGEC-B Core Area. AGEC designations are subject to change. See AGEC matrix for each course's value(s) in the semester it is taken.

ECN211 [SB] Macroeconomic Principles .............................................................. (3)
ECN212 [SB] Microeconomic Principles .............................................................. (3)
GBS205 Legal, Ethical, and Regulatory Issues in Business .................................. (3)
GBS221 Business Statistics .................................................................................. (3)
CIS162AD C#: Level 1 ........................................................................................ (3)
CIS250 Management of Information Systems ....................................................... (3)
Quantitative Methods .......................................................................................... (3-4)
GBS220 Quantitative Methods in Business OR MAT217 or MAT218 Mathematical Analysis for Business

Students planning to attend ASU W. P. Carey School of Business will be required to take MAT217 or MAT218

II. Arizona General Education Curriculum-Business (AGEC-B) 29-37

The AGEC-B requires a minimum of 35 credits, however, Required and Restricted elective courses may also meet AGEC-B requirements and credits count once toward the total for the degree. Therefore, the AGEC-B may be met with fewer than 35 credits as long as all requirements listed in this section (II) are completed.

A. Core Areas:

1. First-Year Composition [FYC]......................................................... 6
   ENG101 OR ENG107 AND ENG108 .................................................. (3)
   ENG102 OR ENG108 ........................................................................ (3)
2. Literacy and Critical Inquiry [L] ..................................................... 3
   (Note: Students planning to attend ASU W. P. Carey will be required to take COM225.)
   MAT212 Brief Calculus OR MAT213 Brief Calculus OR
   Higher [MA] designated course ....................................................... (4)
   CIS105 Survey of Computer Information Systems
5. Humanities, Arts and Design [HU] .................................................... 6
   Students are encouraged to choose course work from more than one discipline.
6. Social-Behavioral Sciences [SB] ....................................................... 0
   Met by Required Courses ECN211 AND ECN212
7. Natural Sciences [SQ/SG] ................................................................. 8
   The lecture courses selected for Natural Sciences must include or be accompanied by the corresponding laboratory courses for a total of four credits each. Credits for lecture and lab components may be combined or each may carry separate credit. At least four credits must be designated as SQ-Science Quantitative. Eight credits of SG-Science General will not satisfy this requirement.
   0-6
   Some courses may be used to satisfy both a Core Area and one or more Awareness Area(s). (See AGEC matrix for course current values.)

I. Arizona General Education Curriculum

1. Cultural Diversity in the United States [C] ............................................. (0-3)
2. Global Awareness [G] OR Historical Awareness [H] ............................... (0-3)

Note: Students transferring to ASU in Accountancy should take two of the following courses: Sociology with [SB] value, Psychology with [SB] value, and COM210 or COM225. If students do not take these prior to transfer, they may need to take additional hours to meet ASU requirements.

III. General Electives ................................................................................. 0-6

Select courses 100-level or higher if needed to complete a minimum of 62 semester credits but no more than a total of 64 semester credits, which is the maximum number of credits accepted toward most degree programs at Arizona’s public universities. Ideally, students should select courses that meet requirements for their major/area of interest and transfer institution. See General Associate Degree Academic Policies for further details, limitations, and guidelines.

Maricopa courses and external courses evaluated as Maricopa equivalents, departmental electives (e.g., HISELC for a history elective), or general electives (GENELC) that are numbered 100 level or higher, and completed with a grade of “C” or higher, may be applied in the elective area, regardless of potential transferability to other institutions. It is recommended, however, that students planning to transfer to a baccalaureate-granting institution meet these general elective requirements with courses that are transferable and applicable to their intended university degree. Transfer advisement information is accessible on the following websites: aztransfer.com, curriculum.maricopa.edu, as well as those of individual universities. For appropriate course selection, students should consult with an academic advisor.

TOTAL ........................................................................................................... 62-71*
I. Arizona General Education Curriculum (AGEC)  

CIS162AD C#: Level 1
Quantitative Methods
CIS250 Management of Information Systems

II. Arizona General Education Curriculum- Business (AGEC-B)  

The AGEC-B requires a minimum of 35 credits, however, Required and Restricted elective courses may also meet AGEC-B requirements and credits count once toward the total for the degree. Therefore, the AGEC-B may be met with fewer than 35 credits as long as all requirements listed in this section (II) are completed.

A. Core Areas:

Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G], and/or [H] requirement(s) as well as their respective Core Area, Required Course(s) or Restricted Elective(s). AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course's value(s) in the semester it is taken.

1. First-Year Composition [FYC]...
   ENG101 OR ENG107 AND ENG102 OR ENG108...

2. Literacy and Critical Inquiry [L]...

(Note: Students planning to attend ASU W. P. Carey School of Business will be required to take MAT217 or MAT218 Mathematical Analysis for Business)

3. Mathematical Applications [MA]
   MAT212 Brief Calculus OR MAT213 Brief Calculus OR Higher [MA] designated course

   CIS105 Survey of Computer Information Systems

5. Humanities, Arts and Design [HU]...
   Students are encouraged to choose course work from more than one discipline.

6. Social-Behavioral Sciences [SB]...
   Met by Required Courses ECN211 AND ECN212

7. Natural Sciences [SQ/SG]...
   The lecture courses selected for Natural Sciences must include or be accompanied by the corresponding laboratory courses for a total of four credits each. Credits for lecture and lab components may be combined or each may carry separate credit. At least four credits must be designated as SQ-Science Quantitative. Eight credits of SG-Science General will not satisfy this requirement.

B. Awareness Areas...

Some courses may be used to satisfy both a Core Area and one or more Awareness Area(s). (See AGEC matrix for current course values.)

III. General Electives...

Select courses 100-level or higher if needed to complete a minimum of 62 semester credits but no more than a total of 64 semester credits, which is the maximum number of credits accepted toward most degree programs at Arizona’s public universities. Ideally, students should select courses that meet requirements for their major/area of interest and transfer institution. See General Associate Degree Academic Policies for further details, limitations, and guidelines.

Maricopa courses and external courses evaluated as Maricopa equivalents, departmental electives (e.g., HISELC for a history elective), or general electives (GENELC) that are numbered 100 level or higher, and completed with a grade of “C” or higher, may be applied in the elective area, regardless of potential transferability to other institutions. It is recommended, however, that students planning to transfer to a baccalaureate-granting institution meet these general elective requirements with courses that are transferable and applicable to their intended university degree. Transfer advisement information is accessible on the following websites: aztransfer.com, curriculum.maricopa.edu, as well as those of individual universities. For appropriate course selection, students should consult with an academic advisor.

TOTAL... 62-71*

*64 semester credits is the maximum accepted toward most degree programs at Arizona’s public universities. Some exceptions apply; consult with an academic advisor for additional transfer pathways.
Purpose of the Academic Certificate

The Maricopa County Community College District Academic Certificate (AC) is a defined and coherent program of study that is recommended for students who wish to gain additional expertise in a specific area of emphasis in an academic discipline. While this program of study can result in proficiency in specified skills and competencies, as well as mastery of a body of knowledge, it is not designed to prepare someone for employment in a specific occupation. The coursework for an Academic Certificate may be from a variety of disciplines or it can be discipline specific. There is no required general studies component to an Academic Certificate; however, the program may include some courses that have specific general studies designations such as Humanities, Arts and Design (HU), Social-Behavioral Sciences (SB), Literacy and Critical Inquiry (LI), or Cultural Awareness (C). (See AGEC matrix for current course values.)

Academic Policies that Govern the Academic Certificate:

- Although, the program of study for an Academic Certificate (AC) does not have a mandated minimum number of credit hours, most ACs require approximately 12-39 credit hours in courses numbered 100 and above;
- Requires a cumulative GPA of 2.0 or better in required courses for completion;
- Follows the graduation policies listed in the college’s general catalog for the appropriate catalog year;
- Any course cross-referenced under another prefix(es) (for example ENH291/EDU291/STO291-Children’s Literature) covers identical content and its credits can only be counted once toward certificate requirements;
- Although ACs may include a subset of coursework required in particular transfer degrees, the intent of an AC is not to align with any specific university major. There is no presumption of block transfer to another college or university;
- May have admission criteria established by the college if and when appropriate;
- Generally offered at a limited number of colleges. For a listing of all ACs available in the district and their affiliated college(s) see the CCTA web site.

Academic Policies that Govern the AGEC-A, -B, -S

MCCCD Associate in Arts (AA) degree (and major-specific pathway versions), the AGEC-B is part of the MCCCD Associate in Business (ABUS) degree (and major-specific pathway versions), and the AGEC-S defines the general education requirements in the MCCCD Associate in Science (AS) degree (and major-specific pathway versions).

As described in more detail below, all AGECs require designated Core courses in First Year Composition (FYC), Literacy and Critical Inquiry (LI), Mathematical Studies (MACS) (Exception: The AGEC-S does not require CS.), Social-Behavioral Sciences (SB), Humanities, Design and Fine Arts (HU), and Natural Science (SQ/SG). Students must satisfy two Awareness areas: Cultural Diversity in U.S. and either Global Awareness or Historical Awareness.

Purpose of the AGECs

AGECs were designed to articulate with different academic majors, and their particular requirements vary accordingly. In some major-specific pathways, students are allowed to choose from a broad list of courses to satisfy the AGEC requirements; for others the courses are more restricted or even specified. Additional information on academic majors at the Arizona public universities can be accessed via the following website: www.azcollege.gov.

1. The AGEC-A is designed to satisfy requirements in many liberal arts majors as well as other majors that articulate with an Associate in Arts degree (e.g., social sciences, fine arts, humanities, elementary education). AGEC-A requires a minimum of college mathematics or college algebra to satisfy the Mathematics (MA) requirement.

2. The AGEC-B is designed to satisfy requirements in business majors that articulate with the Associate in Business. AGEC-B requires a minimum of brief calculus to satisfy the Mathematics (MA) requirement.

3. The AGEC-S is designed to satisfy requirements in majors with more prescriptive mathematics and mathematics-based science requirements such as many in the sciences, technology, engineering and mathematics. AGEC-S requires a minimum of the first course in a calculus sequence to satisfy the Mathematics (MA) requirement, and a minimum of eight credits of either university chemistry, university physics or general biology for majors to satisfy the Natural Sciences (SQ/SG) requirement. In addition, students must select six to ten additional credits of math and/or science appropriate to their major.

Academic Policies that Govern the AGEC-A, -B, -S

- Requires completion of at least 35 credit hours (AGEC-A, AGEC-B) and 36 credit hours (AGEC-S) in courses numbered 100 and above and a minimum of 12 of those credits be taken at one college or any combination of the MCCCD colleges.
- All courses applied to the AGEC must be completed with a grade of “C” or better.
- A single course can simultaneously count toward a Core Area and one or more Awareness Areas. For example, a course in world geography can be used to satisfy [SB] and [G] requirements. While multiple requirements can be met with a single course, the credits for that course are only counted one time toward
Purpose of the Academic Certificate

The Maricopa County Community College District Academic Certificate (AC) is a defined and coherent program of study that is recommended for students who wish to gain additional expertise in a specific area of emphasis in an academic discipline. While this program of study can result in proficiency in specified skills and competencies, as well as mastery of a body of knowledge, it is not designed to prepare someone for employment in a specific occupation. The coursework for an Academic Certificate may be from a variety of disciplines or it can be discipline specific. There is no required general studies component to an Academic Certificate; however, the program may include some courses that have specific general studies designations such as Humanities, Arts and Design [HU], Social-Behavioral Sciences [SB], Literacy and Critical Inquiry [L], or Cultural Awareness [C]. (See AGEC matrix for current course values.)

Academic Policies that Govern the Academic Certificate:

- Although, the program of study for an Academic Certificate (AC) does not have a mandated minimum number of credit hours, most ACs require approximately 12-39 credit hours in courses numbered 100 and above;
- Requires a cumulative GPA of 2.0 or better in required courses for completion;
- Follows the graduation policies listed in the college’s general catalog for the appropriate catalog year;
- Any course cross-referenced under another prefix(es) (for example ENH291/EDU291/STO291 - Children’s Literature) covers identical content and its credits can only be counted once toward certificate requirements;
- Although ACs may include a subset of coursework required in particular transfer degrees, the intent of an AC is not to align with any specific university major. There is no presumption of block transfer to another college or university;
- May have admission criteria established by the college if and when appropriate;
- Generally offered at a limited number of colleges. For a listing of all ACs available in the district and their affiliated college(s) see the CTTA web site.

Maricopa Community Colleges (MCCCD) 2019-2020 Academic Certificate (AC)

Maricopa County Community College District General Education Curriculum 2019-2020

Maricopa Community Colleges (MCCCD) 2019-2020 Arizona General Education Curriculum (AGEC) – A, B, S

Description

The Maricopa County Community College District Arizona General Education Curriculum (MCCCD AGEC) is a general education certificate that fulfills lower-division general education requirements for students planning to transfer to any Arizona public community college or university. Generally, the MCCCD AGEC transfers as a block without loss of credit. The AGEC-A and AGEC-B require a minimum of 35 credit hours, and the AGEC-S requires a minimum of 36 credit hours.

In most cases, all courses used to satisfy the MCCCD AGEC will apply to graduation requirements of the university major for which the AGEC was designed.

There are three types of AGECs in MCCCD. They are the AGEC-A, the AGEC-B, and the AGEC-S. As described below, these AGECs are also a component of most MCCCD Associate degrees and comparable degrees at other Arizona public community colleges. The AGEC-A is the general education block of the MCCCD Associate in Arts (AA) degree (and major-specific pathway versions), the AGEC-B is part of the MCCCD Associate in Business (ABUS) degree (and major-specific pathway versions), and the AGEC-S defines the general education requirements in the MCCCD Associate in Science (AS) degree (and major-specific pathway versions).

As described in more detail below, all AGECs require designated Core courses in First Year Composition [FYC], Literacy and Critical Inquiry [L], Mathematical Studies [MA/CS] (Exception: The AGEC-S does not require CS.), Social-Behavioral Sciences [SB], Humanities, Design and Fine Arts [HU], and Natural Science [SQ/SG]. Students must satisfy two Awareness areas: Cultural Diversity in U.S. and either Global Awareness or Historical Awareness.

Purpose of the AGECs

AGECs were designed to articulate with different academic majors, and their particular requirements vary accordingly. In some major-specific pathways, students are allowed to choose from a broad list of courses to satisfy the AGEC requirements; for others the courses are more restricted or even specified. Additional information on academic majors at the Arizona public universities can be accessed via the following website: www.aztransfer.com

1. The AGEC-A is designed to satisfy requirements in many liberal arts majors as well as other majors that articulate with an Associate in Arts degree (e.g., social sciences, fine arts, humanities, elementary education). AGEC-A requires a minimum of college mathematics or college algebra to satisfy the Mathematics [MA] requirement.
2. The AGEC-B is designed to satisfy requirements in business majors that articulate with the Associate in Business. AGEC-B requires a minimum of brief calculus to satisfy the Mathematics [MA] requirement.
3. The AGEC-S is designed to satisfy requirements in majors with more prescriptive mathematics and mathematics-based science requirements such as many in the sciences, technology, engineering and mathematics. AGEC-S requires a minimum of the first course in a calculus sequence to satisfy the Mathematics [MA] requirement, and a minimum of eight credits of either university chemistry, university physics or general biology for majors to satisfy the Natural Sciences [SQ/SG] requirement. In addition, students must select six to ten additional credits of math and/or science appropriate to their major.

Academic Policies that Govern the AGEC-A, B, S

- Requires completion of at least 35 credit hours (AGEC-A, AGEC-B) and 36 credit hours (AGEC-S) in courses numbered 100 and above and that a minimum of 12 of those credits be taken at one or any combination of the MCCCD colleges.
- All courses applied to the AGEC must be completed with a grade of “C” or better.
- A single course can simultaneously count toward a Core Area and one or more Awareness Areas. For example, a course in world geography can be used to satisfy [SB] and [L] requirements. While multiple requirements can be met with a single course, the credits for that course are only counted one time toward degree requirements.

Pending Governing Board Approval, August 27, 2019

Arizona General Education Curriculum (AGEC) – A, B, S
the required minimum total for the AGEC. Except as detailed below for the AGEC-S, a single course cannot be used to satisfy more than one AGEC Core Area.

• The AGEC-A and AGEC-B require a minimum of 35 credits and the AGEC-S requires a minimum of 36 credits, however, the AGEC credit count within the total credits for a degree may be lower than these minimums if courses are also applied toward Required Courses or Restricted Electives and the credits are counted in those areas. Awareness Areas and MCCCD’s Additional Requirements may also be shared with AGEC Core Areas. Optimizing credits in this way is often recommended because some programs and universities limit transferable credits at 64.

Transfer Credit from Institutions Outside of MCCCD

• Credits transferred from outside of MCCCD must be a grade of “C” (2.0 on a 4.0 scale) or better.
• External courses evaluated either as equivalent to an MCCCD course or as elective credit may be applied toward the minimum credits for degree completion.
• Transfer credit graded pass/fail or pass/no credit may be used to satisfy AGEC requirements if documentation collected by the community college indicates that this was the only grading option available and that the Pass grade (“P”) is equivalent to a “C” or better.
• The AGEC (Arizona General Education Curriculum) designations of courses completed at other Arizona public colleges or universities will be applied as listed on AZTransfer’s Course Equivalency Guide (CEG) for the semester(s) in which the course(s) were completed. If a transcript evaluation determines there is no MCCCD direct equivalency to a course from another Arizona public college or university, applicability to AGEC and/or associate degree requirements will be based on the source institution’s AGEC designation for the semester in which the course was completed.
• Courses from private, out-of-state, and/or online institutions (i.e., outside of the Arizona Transfer System comprised of Arizona’s public community colleges, tribal colleges and universities) will be applied toward AGEC and/or associate degree requirements based on the course’s evaluated MCCCD equivalency. If courses are not directly equivalent, the credit may be articulated as a departmental elective, and if deemed appropriate, may have a general education designation applied to the course.
• Credit awarded at a Maricopa Community College for prior learning in non-traditional setting is transferrable to the other colleges in the MCCCD district but is not necessarily transferrable to other colleges and universities. No more than 20 such assessed semester credit hours may be applied toward AGEC.

Completion and Transfer

• Completion of the AGEC with a minimum grade point average of at least 2.0 on a 4.0 scale for Arizona residents and 2.50 for non-residents meets Arizona public university general admission requirements. It does not ensure admission to specific university majors or programs with selective admission processes and/or limited enrollment.
• Students planning to transfer to another college or university are urged to refer to university requirements and academic advisors from both institutions to be certain that all their selected coursework is applicable to the requirements of their intended transfer degree. For some majors, the statewide Common Course matrix, AZTransfer Pathway Guides and/or University Transfer Guides posted on the AZTransfer website can also provide some guidance. For appropriate course selection, students should consult with an academic advisor.

AGEC Requirements

Descriptions and definitions of the requirements for each of the three AGECs follow. The following website identifies the courses that apply to the different General Education Core and Awareness Areas within each AGEC:

Arizona General Education Curriculum–Arts (AGEC-A)…………………………… 35 (min)

The AGEC-A requires a minimum of 35 credits, however, the AGEC credit count within the total credits for a degree may be under 35 if courses are also applied toward Required Courses or Restricted Electives and the credits are counted in those areas. Credits count once toward the total for the degree. Therefore, the AGEC-A may meet with fewer than 35 credits within an associate degree provided that all requirements listed below are completed.

A. Core Areas:

1. First-Year Composition [FYC]………………………………………………………… 6
2. Literacy and Critical Inquiry [L]…………………………………………………….. 3
3. Mathematical Applications [MA]………………………………………………… 3-6
5. Humanities, Arts and Design [HI]………………………………………………….. 6
6. Social-Behavioral Sciences [SB]…………………………………………………… 6
7. Natural Sciences [SQ/SG]…………………………………………………………….. 8

B. Awareness Areas……………………………………………………………………… 0-6

Some courses may be used to satisfy both a Core Area and one or more Awareness Areas. (See AGEC matrix for current course values.)

1. Cultural Diversity in the United States [C]………………………………………... (0-3)
2. Global Awareness [G] OR Historical Awareness [H]…………………………….. (0-3)

Note: Students pursuing a major-specific pathway within the Associate in Arts, Associate in Business or Associate in Science, the AGEC course requirements may be more prescriptive. Students pursuing a major-specific pathway should consult the Program (Degree) Search at curriculum.maricopa.edu for specific degree and AGEC requirements. Consultation with an academic advisor about course selection is always recommended.
the required minimum total for the AGEC. Except as detailed below for the AGEC-S, a single course cannot be used to satisfy more than one AGEC Core Area.

- The AGEC-A and AGEC-B require a minimum of 35 credits and the AGEC-S requires a minimum of 36 credits, however, the AGEC credit count within the total credits for a degree may be lower than these minimums if courses are also applied toward Required Courses or Restricted Electives and the credits are counted in those areas. Awareness Areas and MCCCD’s Additional Requirements may also be shared with AGEC Core Areas. Optimizing credits in this way is often recommended because some programs and universities limit transferrable credits at 64.

Transfer Credit from Institutions Outside of MCCCD

- Credits transferred from outside of MCCCD must be a grade of “C” (2.0 on a 4.0 scale) or better.
- External courses evaluated either as equivalent to an MCCCD course or as elective credit may be applied toward the minimum credits for degree completion.
- Transfer credit graded pass/fail or pass/no credit may be used to satisfy AGEC requirements if documentation collected by the community college indicates that this was the only grading option available and that the Pass grade ("P") is equivalent to a "C" or better.
- The AGEC (Arizona General Education Curriculum) designations of courses completed at other Arizona public colleges or universities will be applied as listed on AZTransfer's Course Equivalency Guide (CEG) for the semester(s) in which the course(s) were completed. If a transcript evaluation determines there is no MCCCD direct equivalency to a course from another Arizona public college or university, applicability to AGEC and/or associate degree requirements will be based on the source institution's AGEC designation for the semester in which the course was completed.
- Courses from private, out-of-state, and/or online institutions (i.e., outside of the Arizona Transfer System comprised of Arizona's public community colleges, tribal colleges and universities) will be applied toward AGEC and/or associate degree requirements based on the courses' evaluated MCCCD equivalence. If courses are not directly equivalent, the credit may be articulated as a departmental equivalent. Some courses may be met by Required Courses or Restricted Electives. Some Core Areas may be met with fewer than 35 credits within an associate degree provided that all requirements listed below are completed.
- Completion of the AGEC with a minimum grade point average of at least 2.0 on a 4.0 scale for Arizona residents and 2.50 for non-residents meets Arizona public university general admission requirements. It does not ensure admission to specific university majors or programs with selective admission processes and/or limited enrollment.
- Students planning to transfer to another college or university are urged to refer to university requirements and academic advisors from both institutions to be certain that all their selected coursework is applicable to the requirements of their intended transfer degree. For some majors, the statewide Common Core matrix, AZTransfer Pathway Guides and/or University Transfer Guides posted on the AZTransfer website can also provide some guidance. For appropriate course selection, students should consult with an academic advisor.

**AGEC Requirements**

Descriptions and definitions of the requirements for each of the three AGECs follow. The following website identifies the courses that apply to the different General Education Core and Awareness Areas within each AGEC:

**Arizona General Education Curriculum–Arts (AGEC-A).......................... 35 (min.)**

The AGEC-A requires a minimum of 35 credits, however, the AGEC credit count within the total credits for a degree may be under 35 if courses are also applied toward Required Courses or Restricted Electives and the credits are counted in those areas. Credits count once toward the total for the degree. Therefore, the AGEC-A may be met with fewer than 35 credits within an associate degree provided that all requirements listed below are completed.

A. Core Areas:
- Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area, Required Course(s) or Restricted Elective(s). AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course’s value(s) in the semester it is taken.

1. First-Year Composition [FYC]................................................................. 6
   ENG101 OR ENG107............................................................................. (3)
   AND ENG102 OR ENGL102................................................................ (3)

2. Literary and Critical Inquiry [L]............................................................ 3
   Requires a course in college mathematics (MAT140, MAT141, MAT142, MAT145, MAT146) or college algebra (MAT150, MAT151, MAT152, MAT155, MAT156) or pre calculus (MAT157) or MAT158 [MA]-approved general education course.

3. Mathematical Applications [MA]......................................................... 3-6
   Requires a course in college mathematics (MAT140, MAT141, MAT142, MAT145, MAT146) or college algebra (MAT150, MAT151, MAT152, MAT155, MAT156) or pre calculus (MAT157) or MAT158 [MA]-approved general education course.

   Humanities, Arts and Design [HII]...................................................... 6
   Students are encouraged to choose course work from more than one discipline.

5. Social-Behavioral Sciences [SB]............................................................ 6
   Students are encouraged to choose course work from more than one discipline.

6. Natural Sciences [SQ/SI]................................................................. 8
   The lecture courses selected for Natural Sciences must include or be accompanied by the corresponding laboratory courses for a total of four credits each. Credits for lecture and lab components may be combined or each may carry separate credit. At least four credits must be designated as SQ-Science Quantitative. Eight credits of SQ-Science General will not satisfy this requirement.

B. Awareness Areas. ........................................................................ 0-6
- Some courses may be used to satisfy both a Core Area and one or more Awareness Areas (See AGEC matrix for current course values.)

1. Cultural Diversity in the United States [C]........................................ (0-3)
2. Global Awareness [G] OR Historical Awareness [H]......................... (0-3)
Arizona General Education Curriculum - Business (AGEC-B) 

The AGEC-B requires a minimum of 35 credits, however, the AGEC credit count within the total credits for a degree may be under 35 if courses are also applied toward Required Courses or Restricted Electives and the credits are counted in those areas. Credits count once toward the total for the degree. Therefore, the AGEC-B may be met with fewer than 35 credits within an associate degree provided that all requirements listed below are completed. 

A. Core Areas: 

Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area. Required Course(s) or Restricted Elective(s). AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course’s value(s) in the semester it is taken. 

1. First-Year Composition [FYC] (6) 
   ENG101 OR ENG107 AND ENG102 OR ENG108 (3) 
2. Literacy and Critical Inquiry [L] (3-5) 
   MAT212 Brief Calculus OR MAT213 Brief Calculus OR CIS105 Survey of Computer Information Systems (4) 
3. Mathematical Applications [MA] (3-5) 
4. Natural Sciences [SQ/SG] (8) 
   The lecture courses selected for Natural Sciences must include or be accompanied by the corresponding laboratory courses for a total of four credits each. Credits for lecture and lab components may be combined or each may carry separate credit. At least four credits must be designated as SQ-Science Quantitative. Eight credits of SQ-Science General will not satisfy this requirement. 
5. Humanities, Arts and Design [HU] (6) 
   Students are encouraged to choose course work from more than one discipline. 
6. Social-Behavioral Sciences [SB] (6) 
7. Natural Sciences [SQ/SG] (8) 

B. Awareness Areas: 

Some courses may be used to satisfy both a Core Area and one or more Awareness Area(s). See AGEC matrix for current course values. 

1. Cultural Diversity in the United States [C] (0-3) 
2. Global Awareness [G] OR Historical Awareness [H] (0-3) 

Arizona General Education Curriculum - Science (AGEC-S) 

The AGEC-S requires a minimum of 36 credits, however, the AGEC credit count within the total credits for a degree may be under 35 if courses are also applied toward Required Courses or Restricted Electives and the credits are counted in those areas. Credits count once toward the total for the degree. Therefore, the AGEC-S may be met with fewer than 36 credits within an associate degree provided that all requirements listed below are completed. 

A. Core Areas: 

Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area. Required Course(s) or Restricted Elective(s). AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course’s value(s) in the semester it is taken. 

1. First-Year Composition [FYC] (3) 
   ENG101 OR ENG107 AND ENG102 OR ENG108 (3) 
2. Literacy and Critical Inquiry [L] (0-3) 
   Students are strongly encouraged to choose an [L] course that also has [HU] or [SB] designation or to use CRE101 or COM225 from the Maricopa Additional Requirements Area to satisfy the [L] requirement. It may also have been approved to satisfy one or more Awareness Areas (C), [G], [H]). AGEC designations are subject to change. See AGEC matrix for each course’s value(s) in the semester it is taken. 
3. Mathematical Applications [MA] (4-5) 
   Require the first semester of calculus courses designed for scientists and engineers (MAT220 or MAT221) or any other [MA] designated course for which Calculus I is a pre-requisite. 
4. Humanities, Arts and Design [HU] (6) 
   For the AGEC-S, a single course with both [HU] and [L] designations may satisfy both areas. Note that some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area(s). (AGEC designations are subject to change. See AGEC matrix for each course’s value(s) in the semester it is taken.) 
5. Social-Behavioral Sciences [SB] (6) 
   For the AGEC-S, a single course with both [SB] and [L] designations may satisfy both Areas. Note that some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area(s). (AGEC designations are subject to change. See AGEC matrix for each course’s value(s) in the semester it is taken.) 
6. Natural Sciences [SQ/SG] (8) 
   Students must complete eight (8) credits of General Chemistry, University Physics or General Biology for Majors. Consult specific requirements of university transfer major for guidance. 

OR

Center for Curriculum and Transfer Articulation, June 25, 2019
PENDING Governing Board Approval, August 27, 2019
Arizona General Education Curriculum - Business (AGEC-B) — 35 (min.)

The AGE-B requires a minimum of 35 credits, however, the AGEC credit count within the total credits for a degree may be under 35 if courses are also applied toward Required Courses or Restricted Electives and the credits are counted in those areas. Credits count once toward the total for the degree. Therefore, the AGE-B may be met with fewer than 35 credits within an associate degree provided that all requirements listed below are completed.

A. Core Areas:

Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area. Required Course(s) or Restricted Elective(s) AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course’s value(s) in the semester it is taken.

1. First-Year Composition [FYC]................................................................................ 6
   ENG101 OR ENG107 AND ENG102 OR ENG108.................................................. (3)
2. Literacy and Critical Inquiry [L]............................................................................. 3
3. Mathematical Applications [MA]........................................................................... (3-5)
   MAT121 Brief Calculus OR
   MAT213 Brief Calculus OR
   Higher [MA] designated course [(3-5)
   CIS105 Survey of Computer Information Systems
5. Humanities, Arts and Design [HI]........................................................................... 6
   Students are encouraged to choose course work from more than one discipline.
6. Social-Behavioral Sciences [SB]............................................................................ 6
   ECON111 Macroeconomics AND ECON112 Microeconomics
7. Natural Sciences [SQ/SG]...................................................................................... 8
   The lecture courses selected for Natural Sciences must include or be accompanied by the corresponding laboratory courses for a total of four credits each. Credits for lecture and lab components may be combined or each may carry separate credit. At least four credits must be designated as SQ-Science Quantitative. Eight credits of SQ-Science General will not satisfy this requirement.
8. A. Awareness Areas............................................................................................ 0-6
   Some courses may be used to satisfy both a Core Area and one or more Awareness Area(s). (See AGEC matrix for current course values.)
   1. Cultural Diversity in the United States [C]....................................................... (0-3)
   2. Global Awareness [G] OR Historical Awareness [H].................................. (0-3)

Arizona General Education Curriculum - Science (AGEC-S) — 36 (min.)

The AGEC-S requires a minimum of 36 credits, however, the AGEC credit count within the total credits for a degree may be under 35 if courses are also applied toward Required Courses or Restricted Electives and the credits are counted in those areas. Therefore, the AGEC-S may be met with fewer than 36 credits within an associate degree provided that all requirements listed below are completed.

A. Core Areas:

Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area. Required Course(s) or Restricted Elective(s) AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course’s value(s) in the semester it is taken.

1. First-Year Composition [FYC]............................................................................. (6)
   ENG101 OR ENG107 AND ENG102 OR ENG108.............................................. (3)
2. Literacy and Critical Inquiry [L]............................................................................ (0-3)
   Students are strongly encouraged to choose an [L] course that also has [HU] or [SB] designation or to use CBE101 or CMR225 from the Maricopa Additional Requirements Area to satisfy the [L] requirement. It may also have been approved to satisfy one or more Awareness Areas (C), (G), (H). (AGEC designations are subject to change. See AGEC matrix for each course’s value(s) in the semester it is taken.)
3. Mathematical Applications [MA]........................................................................4-5
   Requires the first semester of calculus courses designed for scientists and engineers (MAT220 or MAT221) or any other MA designated course for which Calculus I is a pre-requisite.
4. Humanities, Arts and Design [HI].................................................................6
   For the AGEC-S, a single course with both [HU] and [L] designations may satisfy both Areas. Note that some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area(s). (AGEC designations are subject to change. See AGEC matrix for each course’s value(s) in the semester it is taken.)
5. Social-Behavioral Sciences [SB]..........................................................................6
   For the AGEC-S, a single course with both [SB] and [L] designations may satisfy both Areas. Note that some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area(s). (AGEC designations are subject to change. See AGEC matrix for each course’s value(s) in the semester it is taken.)
6. Natural Sciences [SQ/SG]....................................................................................8
   Students must complete eight (8) credits of General Chemistry, University Physics or General Biology for Majors. Consult specific requirements of university transfer major for guidance.
   [CHM151 & CHM151L] or CHM151AA or CHM151LA General Chemistry I
   AND
   [CHM152 & CHM152L] or CHM152AA General Chemistry II
Computer/Statistics/Quantitative Applications [CS] AGEC-A and AGEC-B require a course that emphasizes the use of statistics, other mathematical methods, computer programming languages and/or software in the interpretation of data and in describing and analyzing quantitative relationships.

Mathematical Applications [MA] The Mathematical Studies requirement is intended to ensure that students have requisite skill in mathematics appropriate for their discipline and can apply mathematical analysis in their chosen fields.

Computer/Statistics/Quantitative Applications [CS] AGEC-A and AGEC-B require a course that emphasizes the use of statistics, other mathematical methods, computer programming languages and/or software in the interpretation of data and in describing and analyzing quantitative relationships.
Refer to transfer resources, including academic advisement and transfer guides, to select six (6)-ten (10) additional math and/or science credits that meet requirements for selected major.

Select Mathematics course(s) [MAT]: above Calculus I and/or Computer Science course(s) [CSC] and/or Science courses from the following disciplines: Astronomy, Biology, Botany, Chemistry, Engineering, Environmental Science, Geology, Physical Geography, Physics, Zoology (MCCCD prefixes AST, BIO except BIO174J, CHM, ECE, EEE, ENV, GLG, GPH, and/or PHT)

B. Awareness Area(s) (See AGEC matrix for current course values.)

7. Some courses may be used to satisfy both a Core Area and one or more Awareness Area(s). (See AGEC matrix for current course values.)

1. Cultural Diversity in the United States [C] .................................................. [0-3]

2. Global Awareness [G] OR Historical Awareness [H] ................................. [0-3]

AGEC Area Requirements Descriptions/Definitions

CORE AREAS

First-Year Composition (FVC)

First-Year Composition courses emphasize skills necessary for college-level expository writing, including correct grammar and punctuation, logical organization of ideas, and identification of supporting documentation. Literacy and Critical Inquiry [L]

In the [L] course students, typically at the sophomore level, gather, interpret, and evaluate evidence and express their findings in writing or speech. This course includes a series of graded written or spoken formal assignments. Literacy is defined broadly as communicative competence in written and oral discourse; critical inquiry is defined as the gathering, interpreting, and evaluating of evidence. Building on the proficiency attained in traditional First-Year Composition courses, the Literacy and Critical Inquiry [L] requirement sustains and extends students' ability to thoughtfully use and critically analyze written and/or spoken language.

Mathematical Applications [MA]

The Mathematical Studies requirement is intended to ensure that students have requisite skill in mathematics appropriate for their discipline and can apply mathematical analysis in their chosen fields.

Computer/Statistics/Quantitative Applications [CS]

AGEC-A and AGEC-B require a course that emphasizes the use of statistics, other mathematical methods, computer programming languages and/or software in the interpretation of data and in describing and analyzing quantitative relationships.
Courses that satisfy the global awareness option in the requirements are of one or more of the following types:

1. Area studies that are concerned with an examination of culture-specific elements of a region of the world;
2. The study of a non-English language;
3. Studies of international relationships, particularly those in which cultural change is facilitated by such factors as social and economic development, education, and the transfer of technology; and
4. Studies of cultural interrelationships of global scope such as the global interdependence produced by problems of world ecology.

Historical Awareness [H]

The Historical Awareness Area option in the requirements aims to develop a knowledge of the past that can be useful in shaping the present and future. Because historical forces and traditions have created modern life and lie just beneath its surface, historical awareness is an aid in the analysis of present-day problems. Also, because the historical past is a source of social and national identity, historical study can produce intercultural understanding by tracing cultural differences to their origins. Even the remote past may have instructive analogies for the present.

The Historical Awareness Area consists of courses that are historical in method and content. In this area, the term “history” designates a sequence of past events or a narrative whose intent or effect is to represent such a sequence.

The requirement presumes that these are human events and that history includes all that has been felt, thought, imagined, said, and done by human beings. History is present in the languages, art, music, literature, philosophy, religion, and the natural sciences, as well as in the social science traditionally called history.

Purpose of the Degree

The Associate in General Studies (AGS) degree is recommended for students whose educational goals require flexibility. The AGS allows students to apply any course numbered 100 or above, including some that are not transferable to a state university, toward the credits required for the degree. Therefore, for students who intend to transfer to another college or university in the future to pursue a bachelor’s degree, this degree may be less appropriate than other Associate degrees offered (Associate in Arts, Associate in Business, Associate in Science, and all major-specific pathway map versions of these degrees) by the Maricopa Community Colleges.

Academic Policies that Govern the Associate in General Studies Degree:

- The graduation policies within the general catalog must be satisfied.
- A single course can simultaneously count towards a Core Area and a Distribution requirement. Courses that meet this criterion are bold print and underscored in the Core areas and Distribution areas (on the course list at the conclusion of this document). For example, CRE101 may be used to satisfy both the Literacy and Critical Inquiry requirement [L] of Distribution area and the Core Curriculum’s Critical Reading area. While multiple requirements can be met with a single course, the credits are only counted one time toward the required minimum for the degree. A course cannot satisfy more than one Core area, even if it is approved for more than one Core area. A course cannot satisfy more than one Distribution area, even if it is approved for more than one Distribution area.
- Credits transferred from outside of MCCCD must be at a grade of “C” (2.0 on a 4.0 scale) or better. Transfer credit graded pass/fail or pass/no credit may be transferred if documentation collected by the community college indicates that this was the only grading option available to the student and that the Pass grade (“P”) is equivalent to a “C” or better.
- Completion of the AGS with a minimum Grade Point Average of at least 2.0 on a 4.0 scale for Arizona residents and 2.50 for non-residents meets Arizona public university general admission requirements. However, meeting all AGS minimums does not ensure admission to specific university majors or programs with selective admission processes and/or limited enrollment. Furthermore, because the AGS is not designed to align with the requirements for bachelors degrees, not all credits may be transferable and students may have deficiencies in lower division (100- and 200-level) courses for a particular major.

Summary of Degree Requirements:

Details on how to identify courses approved for each of the different categories is described following the outline.

I. MCCCD General Education

<table>
<thead>
<tr>
<th>Core Areas</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. First-Year Composition</td>
<td>6</td>
</tr>
<tr>
<td>2. Mathematics</td>
<td>3-5</td>
</tr>
</tbody>
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Center for Curriculum and Transfer Articulation, June 29, 2019
Pending Governing Board Approval, August 27, 2019
Courses that satisfy the global awareness option in the requirements are of one or more of the following types:

1. Area studies that are concerned with an examination of culture-specific elements of a region of the world;
2. The study of a non-English language;
3. Studies of international relationships, particularly those in which cultural change is facilitated by such factors as social and economic development, education, and the transfer of technology; and
4. Studies of cultural interrelationships of global scope such as the global interdependence produced by problems of world ecology.

**Historical Awareness [H]**

The Historical Awareness Area option in the requirements aims to develop a knowledge of the past that can be useful in shaping the present and future. Because historical forces and traditions have created modern life and lie just beneath its surface, historical awareness is an aid in the analysis of present-day problems. Also, because the historical past is a source of social and national identity, historical study can produce intercultural understanding by tracing cultural differences to their origins. Even the remote past may have instructive analogies for the present.

The Historical Awareness Area consists of courses that are historical in method and content. In this area, the term “history” designates a sequence of past events or a narrative whose intent or effect is to represent such a sequence.

The requirement presumes that these are human events and that history includes all that has been felt, thought, imagined, said, and done by human beings. History is present in the languages, art, music, literature, philosophy, religion, and the natural sciences, as well as in the social science traditionally called history.

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<tr>
<td><strong>Core Areas</strong></td>
<td><strong>I. General Education (minimum of 38 credits)</strong></td>
</tr>
<tr>
<td>Core curriculum (requires a grade of “C” or better)</td>
<td>1. First-Year Composition 6 ENG101 OR ENG107 AND ENG102 OR ENG108</td>
</tr>
<tr>
<td>Distribution courses (requires a grade of “D” or better)</td>
<td>2. Mathematics 3-5</td>
</tr>
<tr>
<td>General Electives (enough additional courses numbered 100 or above, passed with a grade of “D” or better, to bring total credits to at least 60)</td>
<td></td>
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**Purpose of the Degree**

The Associate in General Studies (AGS) degree is recommended for students whose educational goals require flexibility. The AGS allows students to apply any course numbered 100 or above, including some that are not transferable to a state university, toward the credits required for the degree. Therefore, for students who intend to transfer to another college or university in the future to pursue a bachelor’s degree, this degree may be less appropriate than other Associate degrees offered (Associate in Arts, Associate in Business, Associate in Science, and all major-specific pathway map versions of these degrees) by the Maricopa Community Colleges.

**Academic Policies that Govern the Associate in General Studies Degree:**

- The graduation policies within the general catalog must be satisfied.
- A single course can simultaneously count towards a Core Area and a Distribution requirement. Courses that meet this criterion are bold print and underscored in the Core areas and Distribution areas (on the course list at the conclusion of this document). For example, CRE101 may be used to satisfy both the Literacy and Critical Inquiry requirement (L) of Distribution area and the Core Curriculum’s Critical Reading area. While multiple requirements can be met with a single course, the credits are only counted one time toward the required minimum for the degree. A course cannot satisfy more than one Core area, even if it is approved for more than one Core area. A course cannot satisfy more than one Distribution area, even if it is approved for more than one Distribution area.
- Credits transferred from outside of MCCCD must be at a grade of “C” (2.0 on a 4.0 scale) or better. Transfer credit graded pass/fail or pass/no credit may be transferred if documentation collected by the community college indicates that this was the only grading option available to the student and that the Pass grade (“P”) is equivalent to a “C” or better.
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Center for Curriculum and Transfer Articulation, June 25, 2019
Pending Governing Board Approval, August 27, 2019
II. General Electives

Select additional courses 100-level or higher to complete a minimum of 60 semester credits but no more than a total of 64 semester credits.

Associate in General Studies Total Credits ........................................................................... 60-64

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Maricopa County Community Colleges (MCCCD)
2019-2020 Associate in General Studies (AGS) Degree and General Education Requirements

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Center for Curriculum and Transfer Articulation, June 25, 2019
Pending Governing Board Approval, August 27, 2019
Associate in General Studies Total Credits .......................... 60-64

Associate in General Studies Total Credits .......................... 60-64

3. Natural Sciences ........................................................................ 7-8

Two lecture courses and one corresponding laboratory course are to be selected. Credits for lecture and lab components may be combined or each may carry separate credit. For appropriate course selection students should consult with an academic advisor.

4. Literary and Critical Inquiry ....................................................... 0-3

Literacy requirement may be met with 0 credits only if CRE101 or COM225 is shared between Core and Distribution (see Academic Policies section on prior page). The credits are only counted once, but may be applied to meet Oral Communication and Social-Behavioral Science requirements.

II. General Electives................................................................. 13-26

Select additional courses 100-level or higher to complete a minimum of 60 semester credits but no more than a total of 64 semester credits.

Critical Reading ........................................................................ 0-3

Students may demonstrate proficiency through assessment.

Distribution Areas ............................................................... 22-29

1. Humanities, Arts and Design ..................................................... 9

Students are encouraged to choose course work from more than one discipline.

2. Social-Behavioral Sciences ...................................................... 6-9

Students are encouraged to choose course work from more than one discipline. Social-Behavioral Sciences requirements may be met with 6 credits only if COM101, COM110, or COM230 is shared between Core and Distribution (see Academic Policies section on prior page). The credits are only counted once, but may be applied to meet Oral Communication and Social-Behavioral Science requirements.

3. Natural Sciences ................................................................. 7-8

Two lecture courses and one corresponding laboratory course are to be selected. Credits for lecture and lab components may be combined or each may carry separate credit. For appropriate course selection students should consult with an academic advisor.

4. Literary and Critical Inquiry ....................................................... 0-3

Literacy requirement may be met with 0 credits only if CRE101 or COM225 is shared between Core and Distribution (see Academic Policies section on prior page). The credits are only counted once, but may be applied to meet Oral Communication and Social-Behavioral Science requirements or Critical Reading and Literacy and Critical Inquiry requirements.

5. Critical Reading ........................................................................ 0-3

Students may demonstrate proficiency through assessment.

Distribution Areas ............................................................... 22-29

1. Humanities, Arts and Design ..................................................... 9

Students are encouraged to choose course work from more than one discipline.

2. Social-Behavioral Sciences ...................................................... 6-9

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Two lecture courses and one corresponding laboratory course are to be selected. Credits for lecture and lab components may be combined or each may carry separate credit. For appropriate course selection students should consult with an academic advisor.

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5. Critical Reading ........................................................................ 0-3

Students may demonstrate proficiency through assessment.
282AA-AC (and except 111, 170, 251, 252, 253, 254, 190, 103, 104, 105, 106, 108, 109, 113, 114, 140, 145, 173, HIS History any HIS Course(s), including HES Health Science
FOR Forensic Science
ENG English
EED Early Education
ECH Early Childhood Education
COM Communication
CFS Child/Family Studies
CCS Cultural Relations
BHS Behavioral Health Services Technology
ASB Anthropology
AJS Administration of Justice Studies
AFR African American Studies
shared between Core and Distribution (see Academic Policies
met with 6 credits only if COM100, COM110, or COM230 is
Social-Behavioral Sciences requirements may be
Social-Behavioral Sciences (6-9 credits)
THF Theatre and Film
SWU Social Work
STO Storytelling
SSH Sustainability/Social Sciences and Humanities
SPH Spanish Humanities
SLC Studies in Language & Culture
REL Religious Studies Any REL Course(s),
250,
PHI Philosophy Any PHI Course(s), including
204, 241, 242, 295
LAT Latin
HON Honors
258

Natural Sciences (7-8 credits)
Two lecture courses and one corresponding laboratory course to be selected from the following options: COM100, COM110, or COM230 may carry separate credit. For appropriate course selection students should consult with an advisor. AGS Agricultural Science
AGH Anthropology
AGN American Indian Studies
ASH Administration of Indian Studies
ASM Anthropology
AST Astronomy
ASB Anthropology
BIO Biology
ENH English Humanities
ENG English
FOR Forensic Science
FSC Fire Science Technology
FUS Future Studies
GCU Cultural Geography
HES Health Science
HON Honors
LAT Latin
MHL Music History/Literature
MCO Mass Communications
MGT Management
NAT Natural Science
PHR Philosophy
PSY Psychology
SBE Society and Business
SUS Sustainability/Natural Sciences
SBS Sociology
SOC Sociology
SOE Sociology
SWU Social Work
TEC Textiles and Clothing
WSP Women’s Studies
WST Women’s Studies
YAO Yaqui Indian History and Culture

201, 212, 213, 250, 260, 266, 270, 280, 292

Elective Courses (15-22 credits) May select courses from prefixed already chosen for General Education Distribution requirements in order to develop depth in one or more subject areas.
Students are encouraged to choose courses from more than one discipline. Social-Behavioral Sciences requirements may be met with 6 credits only if COM100, COM110, or COM225 is shared between Core and Distribution requirements. Social-Behavioral Sciences (6-9 credits)

Natural Sciences (7-8 credits)

Two lecture courses and one corresponding laboratory course are to be selected. The lecture and corresponding laboratory course(s) may carry separate credit. For appropriate course selection students should consult with an advisor.

Elective Courses (15-22 credits)

May select courses from prefixes already chosen for General Education Distribution requirements in order to develop depth in one or more subject areas.

Literary and Critical Inquiry (0-3 credits)

Literacy requirements may be met with 0 credits only if CRB101 or COM225 is shared between Core and Distribution (use Academic Policies section). The credits are only counted once, but may be applied to meet Critical Reading and Literacy and Critical Inquiry or Oral Communication and Literacy and Critical Inquiry requirements.
I. Program Prerequisites

Program prerequisites vary by type of Associate in Science degree, and are not required for the non-major-specific version of the degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways within the degree.

II. Required Courses

Required (major-specific) courses vary by type of Associate in Arts degree, and are not required for the non-major-specific version of the degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways within the degree.

III. Restricted Electives

Restricted electives vary by type of Associate in Arts degree, and are not required for the non-major-specific version of the degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways within the degree.

IV. Arizona General Education Curriculum—Science (AGEC-S)

The AGEC-S requires a minimum of 36 credits, however, prerequisite/required/restricted elective courses may also meet AGEC-S requirements and credits count once toward the total for the degree. Therefore, the AGEC-S may be met with fewer than 36 credits as long as all requirements listed in this section (IV) are completed.

A. Core Areas:

Some courses may be met by Required Courses or Restricted Electives. Some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area, Required Course(s) or Restricted Elective(s). AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course's value(s) in the semester it is taken.

1. First-Year Composition (FYC).............................................. 6

   ENG101 OR ENG107

   (3)

   AND ENG102 OR ENG108

   (3)

2. Literary and Critical Inquiry [L]........................................... 3-6 (0-6 only if shared with HU

   or SB)

   Students are strongly encouraged to choose an [L] course that also has

   [HU] or [SB] designation or to use CRE101 or COM225 from the

   Maricopa Additional Requirements Area to satisfy the [L] requirement.

   It may also have been approved to satisfy one or more Awareness Areas

   ([C], [G], [H]). (AGEC designations are subject to change. See AGEC

   matrix for each course's value(s) in the semester it is taken.)

3. Mathematical Applications [MA]........................................ 4-5

   Requires the first semester of calculus courses designed for scientists and

   engineers (MAT220 or MAT221) or any other [MA] designated course

   for which Calculus I is a pre-requisite.

4. Humanities, Arts and Design [HU]................................... 6

   For the AGEC-S, a single course with both [HU] and [L] designations may

   satisfy both Areas. Note that some of these courses also have

   Awareness Areas designations and can be used to satisfy [C], [G]

   and/or [H] requirement(s) as well as their respective Core Area(s).

   (AGEC designations are subject to change. See AGEC matrix for each

   course's value(s) in the semester it is taken.)

5. Social-Behavioral Sciences [SB]...................................... 6

   For the AGEC-S, a single course with both [SB] and [L] designations may

   satisfy both Areas. Note that some of these courses also have

   Awareness Areas designations and can be used to satisfy [C], [G]

   and/or [H] requirement(s) as well as their respective Core Area(s).
### Purpose of the Degree

The Associate in Science degree is designed for students planning to transfer to four-year colleges and universities. In general, the degree meets requirements for majors with more stringent mathematics and mathematics-based science requirements. Generally, the degree will transfer as a block of courses. In most cases, courses used to satisfy the MCCCD Associate in Science will apply to general university graduation requirements of the majors that align with Associate in Science degree; however, students need to be aware of any specific requirements of their intended major at the university to be sure they select courses that will meet those requirements. Information regarding the articulation of the Associate in Science with majors at Arizona's public universities can be accessed via the website www.transfersearch.org.

It is recommended that students select courses that meet more than one general education and/or awareness area requirement. Doing so will maximize the number of math and science electives the student can take as part of his/her Associate in Science degree. Some courses may be required by Required Courses or Restricted Electives. AGEC designations are subject to change. Courses may meet more than one requirement but are only counted once toward the total credits for the degree. See AGEC matrix for each course's values in the semester it is taken.

- The AGEC-S does not require a course with [CS] Computer/Statistics designations.
- Unlike the AGEC-A and AGEC-B, the same course is allowed to satisfy the [L] and [HU] or [L] and [SB] areas of the AGEC-S's Core Area. The credits for such a "shared" course are only counted one time toward the required minimum for the degree.

### Degree Requirements

The requirements for the Associate in Science degree follow. All versions of the Associate in Science degree require at least 60 semester credits for the program of study, minimum total credits for major-specific pathway versions of the Associate in Science degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for credit minimums for individual degree programs. A minimum grade point average of 2.0 is required to earn the degree. The Associate in Science degree, including major-specific pathways within the degree, is governed by the MCCCD General Academic Policies for Transfer Degrees.

#### I. Program Prerequisites

Program prerequisites vary by type of Associate in Science degree, and are not required for the non-major-specific versions of the degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways within the degree.

#### II. Required Courses

Required (major-specific) courses vary by type of Associate in Arts degree, and are not required for the non-major-specific version of the degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways within the degree.

#### III. Restricted Electives

Restricted electives vary by type of Associate in Arts degree, and are not required for the non-major-specific version of the degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for specific courses and credit minimums required for major-specific pathways within the degree.

#### IV. Arizona General Education Curriculum—Science (AGEC-S)

The AGEC-S requires a minimum of 36 credits, however, prerequisite/required/restricted elective courses may also meet AGEC-S requirements and credits count once toward the total for the degree. Therefore, the AGEC-S may be met with fewer than 36 credits as long as all requirements listed in this section (IV) are completed.

A. Core Areas:

- Some courses may be required by Required Courses or Restricted Electives. Some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area. Required Courses or Restricted Electives may also be approved to satisfy one or more Awareness Areas (see AGEC matrix for each course's value(s) in the semester it is taken.)

1. First-Year Composition [FYC].......................... English 101 OR English 107

2. Literacy and Critical Inquiry [L]..........................

3. Mathematical Applications [MA]..........................

4. Humanities, Arts and Design [HU]......................

5. Social-Behavioral Sciences [SB].........................

6. For the AGEC-S, a single course with both [HU] and [L] designations may satisfy both Areas. Note that some of these courses also have Awareness Areas designations and can be used to satisfy [C], [G] and/or [H] requirement(s) as well as their respective Core Area(s). (see AGEC matrix for each course's value(s) in the semester it is taken.)
VI. General Electives

Select courses 100-level or higher if needed to complete a minimum of 60 semester credits but no more than a total of 64 semester credits, which is the maximum number of credits accepted toward most degree programs at Arizona’s public universities. Ideally, students should select courses that meet requirements for their major/area of interest and transfer institution. See General Associate Degree Academic Policies for further details, limitations, and guidelines.
V. MCCCD Additional Requirements

As noted below, courses in this area may be used to satisfy both an MCCCD requirement and an AGEC-S Core Area requirement.

A. Oral Communication

COM100 [SB] Introduction to Human Communication OR
COM110 [SB] Interpersonal Communication OR
COM225 [L] Public Speaking OR

B. Critical Reading

Students may demonstrate proficiency through assessment.

VI. General Electives

Select courses 100-level or higher if needed to complete a minimum of 60 semester credits, but no more than a total of 64 semester credits, which is the maximum number of credits accepted toward most degree programs at Arizona’s public universities. Ideally, students should select courses that meet requirements for their major/area of interest and transfer institution. See General Associate Degree Academic Policies for further details, limitations, and guidelines.

COM100AA & COM100AB & COM100AC [SB] (3 credits)
COM100AA & COM100AB & COM110AC [SB] (3 credits)

* 64 semester credits is the maximum accepted toward most degree programs at Arizona’s public universities. Some exceptions apply; consult with an academic advisor for additional transfer pathways.
The following academic policies govern the associate degrees designed for university transfer (Associate in Arts [AA], Associate in Business [ABUS], and Associate in Science [AS]). Also governed by these policies are the major-specific pathway maps within the AA, ABUS, and AS degrees. Note that academic policies that govern the Associate in General Studies (AGS) and Associate in Applied Science (AAS) degrees are listed separately, with the requirements for each of those degrees.

- The graduation policies within the general catalog must be satisfied (administrative regulation 2.3.9).
- Minimum semester credits for completion vary slightly by degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for credit minimums for individual degree programs.
- Credits completed toward these minimums must be in courses numbered 100 or above with a grade of “C” or better. These credits must include a minimum of 35 in satisfaction of the requirements of the Arizona Board of Regents (ABOR) Desired Common Set and the Arizona General Education Curriculum (AGEC) along with a minimum of 6 credits towards MCCCD’s Additional Requirements.
- Detailed degree requirements are maintained by the Center for Curriculum and Transfer Articulation (CCTA); refer to the program search at https://curriculum.maricopa.edu/. Advisement checksheets are maintained at https://curriculum.maricopa.edu/degree-checksheets/associate-degrees-academic-degree-checklists-aa-abus-as-ags-aas/

General Education Requirements:

- The AGEC requirements include a designated number of courses approved for each of the following areas:
  - **Core:**
    - First Year Composition [FYC]
    - Mathematical Applications [MA], Computer/Statistics/Quantitative Applications [CS] (CS not required for Associate in Science), or Liberal Arts/SCI/Computer Applications
    - Literacy and Critical Inquiry [L]
    - Humanities, Arts and Design [HU]
    - Social-Behavioral Sciences [SB], and
    - Natural Sciences (Science Quantitative [SQ], Science-General [SG]).
  - **Awareness Area:** Cultural Diversity in the U.S. [C]
    - Global [G] or Historical [H]
    - Awareness Area
  - Note that there are three different AGECs each aligning with a different subset of associate degrees—AGEC-A for the Associate in Arts degree and (major-specific pathway maps), AGEC-B for the Associate in Business degree (and major-specific pathway maps), and AGEC-S for the Associate in Science degree (and major-specific pathway maps). For some types of AGECs/Associate degrees, students are allowed to choose from a broad list of courses, for others the courses are more restricted or even specified.
  - A single course can simultaneously count toward a Core Area, one or more Awareness Areas, MCCCD Additional Requirements and, for some degree types, other lower division courses used to meet the degree requirements. For example, CRE101 may be used to satisfy both the MCCCD Reading Requirement and the Literacy and Critical Inquiry area [L] of AGEC core. While multiple requirements can be met with a single course, the credits are only counted once toward the required minimum for the degree.
  - Except for the Associate in Science degree, a single course cannot be used to satisfy more than one AGEC Core Area.
  - The AGEC-A and AGEC-B require a minimum of 35 credits and the AGEC-S requires a minimum of 36 credits; however, the AGEC credit count within the total credits for a degree may be under these minimums if courses are also applied toward Required Courses or Restricted Electives and the credits are counted in those areas. Awareness Areas and MCCCD’s Additional Requirements may also be shared with AGEC Core Areas. Optimizing credits in this way is often recommended because some programs and universities limit transferable credits at 64.

Maricopa Community Colleges (MCCCD)

2019-2020 General Academic Policies for Associate Degrees Designed for University Transfer

Coursework beyond General Education:

- For some degree types, the additional coursework required to complete the degree is specified while others offer the student more latitude. See degree checksheets for more complete description. Consultation with an academic advisor about course selection is always recommended.
- Oral Communication and Critical Reading are MCCCD Additional Requirements required for Associate in Arts and Associate in Science degrees, and the major-specific pathway maps within the AA and AS degrees. Refer to the Program (Degree) Search at curriculum.maricopa.edu for acceptable options to meet these requirements for individual degree programs.
- Within the Restricted Electives, course recommendations are made for specific transfer institutions. Students should select a subplan (group of courses) based on their intended transfer institution. However, not all transfer institutions are reflected in these recommendations. Therefore, students may instead select the general subplan and meet the minimum number of Restricted Elective credits using a combination of courses from the other subplans. Restricted Electives should be selected in consultation with an academic, faculty, or program advisor.
- General Electives may need to be selected to meet the minimum total credits required for the degree. All courses numbered 100 or higher may be applied as General Electives. Students are encouraged to select courses that align with their goals.
- Note that some majors require up to a 4th semester proficiency (202-course level) in a non-English language. Students should consult with an academic advisor to discuss options to complete these requirements.
- Maricopa courses and external courses evaluated as Maricopa equivalents, departmental electives, (e.g., HIS101 for a history elective), or general electives (GENELC) that are numbered 100 level or higher, and completed with a grade of “C” or higher, may be applied in the elective area, regardless of potential transferability to other institutions. It is recommended, however, that students planning to transfer to a baccalaureate-granting institution meet these general elective requirements with courses that are transferable and applicable to their intended university degree. Transfer advisement information is accessible on the following websites: aztransfer.com, Maricopa.Edu, as well as those of individual universities. For appropriate course selection, students should consult with an academic advisor.
- Any course cross-referenced under another prefix(es) (for example ENGLD EDUC1 STOCH1–Children’s Literature) covers identical content and its credits can only be counted once toward requirements.

Transfer Credit from Institutions Outside of MCCCD:

- Credits transferred from outside of MCCCD must be at a grade of “C” (2.0 on a 4.0 scale) or better.
- External courses evaluated either as equivalent to an MCCCD course or as elective credit may be applied toward the minimum credits for degree completion.
- Transfer credit graded pass/fail or pass/no credit may be used to satisfy AGEC requirements if documentation collected by the community college indicates that this was the only grading option available and that the Pass grade (“P”) is equivalent to “C” or better.
- The AGEC (Arizona General Education Curriculum) designations of courses completed at other Arizona public colleges or universities will be applied as listed on AGTransfer’s Course Equivalency Guide (CEG) for the semester(s) in which the course(s) were completed. If a transcript evaluation determines there is no MCCCD direct equivalency to a course from another Arizona public college or university, applicability to AGEC and/or associate degree requirements will be based on the source institution’s AGEC designation for the semester in which the course was completed.
- Courses from private, out-of-state, and/or online institutions (i.e., outside of the Arizona Transfer System comprised of Arizona’s public community colleges, tribal colleges and universities) will be applied toward AGEC and/or associate degree requirements based on the courses’ evaluated MCCCD equivalency. If courses are not directly equivalent, the credit may be articulated as a departmental elective, and if deemed appropriate, may have a general education designation applied to the course.

Center for Curriculum and Transfer Articulation, June 25, 2019
Pending Governing Board Approval, August 27, 2019

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Maricopa Community Colleges (MCCCD)

2019-2020 General Academic Policies for Associate Degrees Designed for University Transfer

Coursework beyond General Education:

- For some degree types, the additional coursework required to complete the degree is specified while others offer the student more latitude. See degree checksheets for more complete description. Consultation with an academic advisor about course selection is always recommended.
- Oral Communication and Critical Reading are MCCCD Additional Requirements required for Associate in Arts and Associate in Science degrees, and the major-specific pathway maps within the AA and AS degrees. Refer to the Program (Degree) Search at curriculum.maricopa.edu for acceptable options to meet these requirements for individual degree programs.
- Within the Restricted Electives, course recommendations are made for specific transfer institutions. Students should select a subplan (group of courses) based on their intended transfer institution. However, not all transfer institutions are reflected in these recommendations. Therefore, students may instead select the general subplan and meet the minimum number of Restricted Elective credits using a combination of courses from the other subplans. Restricted Electives should be selected in consultation with an academic, faculty, or program advisor.
- General Electives may need to be selected to meet the minimum total credits required for the degree. All courses numbered 100 or higher may be applied as General Electives. Students are encouraged to select courses that align with their goals.
- Note that some majors require up to a 4th semester proficiency (202-course level) in a non-English language. Students should consult with an academic advisor to discuss options to complete these requirements.
- Maricopa courses and external courses evaluated as Maricopa equivalents, departmental electives, (e.g., HIS101 for a history elective), or general electives (GENELC) that are numbered 100 level or higher, and completed with a grade of “C” or higher, may be applied in the elective area, regardless of potential transferability to other institutions. It is recommended, however, that students planning to transfer to a baccalaureate-granting institution meet these general elective requirements with courses that are transferable and applicable to their intended university degree. Transfer advisement information is accessible on the following websites: aztransfer.com, Maricopa.Edu, as well as those of individual universities. For appropriate course selection, students should consult with an academic advisor.
- Any course cross-referenced under another prefix(es) (for example ENGLD EDUC1 STOCH1–Children’s Literature) covers identical content and its credits can only be counted once toward requirements.

Transfer Credit from Institutions Outside of MCCCD:

- Credits transferred from outside of MCCCD must be at a grade of “C” (2.0 on a 4.0 scale) or better.
- External courses evaluated either as equivalent to an MCCCD course or as elective credit may be applied toward the minimum credits for degree completion.
- Transfer credit graded pass/fail or pass/no credit may be used to satisfy AGEC requirements if documentation collected by the community college indicates that this was the only grading option available and that the Pass grade (“P”) is equivalent to “C” or better.
- The AGEC (Arizona General Education Curriculum) designations of courses completed at other Arizona public colleges or universities will be applied as listed on AGTransfer’s Course Equivalency Guide (CEG) for the semester(s) in which the course(s) were completed. If a transcript evaluation determines there is no MCCCD direct equivalency to a course from another Arizona public college or university, applicability to AGEC and/or associate degree requirements will be based on the source institution’s AGEC designation for the semester in which the course was completed.
- Courses from private, out-of-state, and/or online institutions (i.e., outside of the Arizona Transfer System comprised of Arizona’s public community colleges, tribal colleges and universities) will be applied toward AGEC and/or associate degree requirements based on the courses’ evaluated MCCCD equivalency. If courses are not directly equivalent, the credit may be articulated as a departmental elective, and if deemed appropriate, may have a general education designation applied to the course.

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The following academic policies govern the degree programs designed for university transfer (Associate in Arts [AA], Associate in Business [ABUS], and Associate in Science [AS]). Also governed by these policies are the major-specific pathway maps, and AGEC-A for the Associate in Arts degree (and major-specific pathway maps), AGEC-B for the Associate in Business degree (and major-specific pathway maps), and AGEC-S for the Associate in Science degree (and major-specific pathway maps). Note that academic policies that govern the Associate in General Studies [AGS] and Associate in Applied Science [AAS] degrees are listed separately, with the requirements for each of these degrees.

- The graduation policies within the general catalog must be satisfied (administrative regulation 2.3.9).
- Minimum semester credits for completion vary slightly by degree. Refer to the Program (Degree) Search at curriculum.maricopa.edu for credit minimums for individual degree programs.
- Credits completed toward these minimums must be in courses numbered 100 or above with a grade of “C” or better. These credits must include a minimum of 35 in satisfaction of the requirements of the Arizona Education Council (AEC) along with a minimum of 6 credits towards MCCCD’s Additional Requirements.
- Detailed degree requirements are maintained by the Center for Curriculum and Transfer Articulation (CCTA); refer to the program search at https://curriculum.maricopa.edu/. Advisement checklists are maintained at https://curriculum.maricopa.edu/curriculum/degrees/college/associate-degrees/academic-degrees-academic-degrees-checklists-as-ags-aas-

General Education Requirements:
- The AGEC requirements include a designated number of courses approved for each of the following areas:
  - Core
    - First Year Composition [FYC]
    - Mathematical Applications [MA], Computer/Statistics/Quantitative Applications [CS] (CS not required for Associate in Science),
    - Literacy and Critical Inquiry [LI],
    - Humanities, Arts and Design [HU],
    - Social-Behavioral Sciences [SB], and
    - Natural Sciences (Science Quantitative [SQ], Science-General [SG]).
  - Awareness Areas
    - Cultural Diversity in the U.S. [C]
    - Global [G] or Historical [H] Awareness
- Note that there are three different AGECs each aligning with a different subset of associate Degrees—AGEC-A for the Associate in Arts degree (and major-specific pathway maps), AGEC-B for the Associate in Business degree (and major-specific pathway maps), and AGEC-S for the Associate in Science degree (and major-specific pathway maps). For some types of AGECs, students are allowed to choose from a broad list of courses, for others the courses are more restricted or even specified.
- A single course can simultaneously count toward a Core Area, one or more Awareness Areas, MCCCD Additional Requirements and, for some degree types, other lower division courses used to meet the degree requirements. For example, CR101 may be used to satisfy both the MCCCD Reading Requirement and the Literacy and Critical Inquiry area [LI] of AGEC core. While multiple requirements can be met with a single course, the credits are only counted one time toward the required minimum for the degree.
- Except for the Associate in Science degree, a single course cannot be used to satisfy more than one AGEC Core Area.
- The AGEC-A and AGEC-B require a minimum of 35 credits and the AGEC-S requires a minimum of 36 credits, however, the AGEC credit count within the total credits for a degree may be under these minimums if courses are also applied toward Required Courses or Restricted Electives and the credits are counted in these areas. Awareness Areas and MCCCD’s Additional Requirements may also be shared with AGEC Core Areas. Optimizing credits in this way is often recommended because some programs and universities limit transferable credits at 64.

Transfer Credit from Institutions Outside of MCCCD:
- Credits transferred from outside of MCCCD must be at a grade of “C” (2.0 on a 4.0 scale) or better.
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Credit awarded at a Maricopa Community College for prior learning is transferable to the other colleges in the district but is not necessarily transferable to other colleges and universities. No more than 20 such assessed semester credit hours may be applied toward AGEC, and no more than 30 credits (including up to 20 toward AGEC) may be applied toward a degree.

Completion and Transfer:
• Completion of the AGEC with a minimum Grade Point Average of at least 2.0 on a 4.0 scale for Arizona residents and 2.50 for non-residents meets Arizona public university general admission requirements. It does not ensure admission to specific university majors or programs with selective admission processes and/or limited enrollment.
• While MCCCD’s associate degrees are designed to facilitate a seamless transfer to other Arizona institutions, courses may be transferable and/or meet associate degree requirements, but may not necessarily meet the specific requirements of a particular degree, major, or area of emphasis at another institution.

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Students planning to transfer to another college or university are urged to refer to university requirements and academic advisors from both institutions to be certain that all their selected coursework is applicable to the requirements of their intended transfer degree and within their allowed transferable credit limit. For some majors, the statewide Common Course matrix and AZTransfer Major Guides at aztransfer.com and/or university transfer guides can also provide some guidance. For appropriate course selection, students should consult with an academic advisor.

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1. Students maintaining continuous enrollment at any public Arizona community college or university may graduate according to the requirements of the catalog in effect at the time of initial enrollment or according to the requirements of any single catalog in effect during subsequent terms of continuous enrollment. Students may maintain continuous enrollment whether attending a single public community college or university in Arizona or transferring among public institutions in Arizona while pursuing their degrees.

2. Students who do not meet the minimum enrollment standard stipulated in No. 1 during three consecutive semesters (fall/spring/fall or spring/fall/spring) and the intervening summer term* at any public Arizona community college or university are no longer considered continuously enrolled, and must meet requirements of the public Arizona community college or university catalog in effect at the time they are readmitted or of any single catalog in effect during subsequent terms of continuous enrollment after readmission.

*Students are not obligated to enroll and earn course credit during summer terms, but summer enrollment may be used to maintain continuous enrollment status.
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CATALOG UNDER WHICH A STUDENT GRADUATES

Students maintaining continuous enrollment at any public Arizona community college or university may graduate according to the requirements of the catalog in effect at the time of initial enrollment or according to the requirements of any single catalog in effect during subsequent terms of continuous enrollment. Students may maintain continuous enrollment whether attending a single public community college or university in Arizona or transferring among public institutions in Arizona while pursuing their degrees.

1. A semester in which a student earns course credit will be counted toward continuous enrollment. Non-credit courses, audited courses, failed courses, or courses from which the student withdraws do not count toward the determination of continuous enrollment for catalog purposes.

EXAMPLE A:
- Admitted & Earned Course Credit at a Public Community College or University Fall '17 (Active)
- Continued at a Public Community College Spring '18, Fall '18 (Active)
- Transferred to a University Spring '19 (2017 or Any Subsequent Catalog)

EXAMPLE B:
- Admitted & Earned Course Credit at a Public Community College or University Fall '14 (Active)
- Enrolled But Earned All Ws, Zs, or Fs Spring '15 (Inactive)
- Enrolled in Audit Courses Only Fall '15 (Inactive)
- Nonattendance Spring '16 (Inactive)
- Transferred to a University Fall '16 (2016 or Any Subsequent Catalog)

2. Students who do not meet the minimum enrollment standard stipulated in No. 1 during three consecutive semesters (fall/spring/fall or spring/fall/spring) and the intervening summer term* at any public Arizona community college or university are no longer considered continuously enrolled, and must meet requirements of the public Arizona community college or university catalog in effect at the time they are readmitted or of any single catalog in effect during subsequent terms of continuous enrollment after readmission.

EXAMPLE A:
- Admitted & Earned Course Credit at a Public Community College or University Fall '14 (Active)
- Nonattendance Spring '15, Fall '15, Spring '16 (Inactive)
- Readmitted & Earned Course Credit at a Public Community College Fall '16 (Active)
- Transferred to a University Spring '17 (2016 or Any Subsequent Catalog)

EXAMPLE B:
- Admitted & Earned Course Credit at a Public Community College or University Fall '14 (Active)
- Nonattendance Spring '15 (Inactive)
- Readmitted & Earned Course Credit at a Public Community College Summer '15 (Inactive)
- Nonattendance Fall '15, Spring '16 (Inactive)
- Transferred to a University Fall '16 (2014 or Any Subsequent Catalog)

*Students are not obligated to enroll and earn course credit during summer terms, but summer enrollment may be used to maintain continuous enrollment status.
Subsequent Catalog

4. Students transferring among Arizona public higher education institutions must meet the admission requirements, residency requirements, and all curricular and academic requirements of the degree-granting institution.

NOTE: Time Limit for Transfer Coursework

Students should be aware that the receiving institution may have age and credit limits on certain coursework to be used in transfer. Students should be knowledgeable about the policies on time limits for transfer coursework for the institution to which they plan to transfer.

EXAMPLE: Admitted & Earned Course Credit at a Public Community College or University

<table>
<thead>
<tr>
<th>Semester</th>
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<tr>
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<tr>
<td>Fall '16, Spring '17</td>
<td>(Active)</td>
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<td>Fall '17</td>
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Continued at a Public Community College

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<td>Summer '18</td>
<td>(2016 or Any Subsequent Catalog)</td>
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Transferred to a University

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<tr>
<th>Semester</th>
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</thead>
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<tr>
<td>Fall '17</td>
<td>(Inactive)</td>
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Readmitted & Earned Course Credit at a Public Community College

<table>
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<tr>
<th>Semester</th>
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</thead>
<tbody>
<tr>
<td>Fall '17</td>
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NOTE: Time Limit for Transfer Coursework

Students should be aware that the receiving institution may have age and credit limits on certain coursework to be used in transfer. Students should be knowledgeable about the policies on time limits for transfer coursework for the institution to which they plan to transfer.

GENERAL GRADUATION REQUIREMENTS

All students are required to complete the degree and/or certificate requirements as approved by the Maricopa Community Colleges (MCCCD) Governing Board. The college reserves the right to make necessary course and program changes in order to meet current educational standards. In addition, students must:

1. Be credited in the Admissions and Records Office/Office of Student Enrollment with no fewer than: 60 semester credit units in courses numbered 100 or above for the Associate in Arts degree, Associate in Science degree and Associate in General Studies degree; 60 semester credit units for the Associate in Applied Science degree; 62 semester credit units for the Associate in Business degree. Minimum semester credit units for completion of major-specific pathway versions of the AA and AS degrees vary slightly by pathway. Refer to the Program (Degree) Search at curriculum.maricopa.edu for credit minimums for individual degree programs. For specific certificate programs, be credited with no fewer than the minimum total of credit units required for the certificate program.

Students not continuously enrolled, as outlined in the Catalog under Which a Student Graduates Policy, must satisfy current graduation requirements.

2. Have earned a minimum of 12 semester credit units toward the degree or certificate at the district college granting the degree or certificate. The 12 hours in the AAS degree curricula must be in the Required Courses area and/or the Restricted Electives courses. Courses from the General Education Core and Distribution areas are excluded. In cases where the certificate requires fewer than 12 credit units, a minimum of six credit units must be completed at the college awarding the certificate. The minimum of six credit hours in the certificate or degree curricula must be in the Required Courses area and/or the Restricted Electives. Courses from the General Education Core and Distribution areas are excluded.

Shared Programs are programs offered at multiple colleges but not available at all colleges. The requirements are identical at all the colleges offering the program. A shared program requires a minimum of six credit hours from the total program requirements to be completed with a grade of "C" or better at the college awarding the certificate or degree. The minimum of six credit hours in the certificate or degree curricula may be in the Required Courses area and/or the Restricted Electives. (The exception is the Nursing program; Nursing students must apply for graduation from the college where they have successfully completed Block 4 of the Associate in Applied Science in Nursing program. Courses from the General Education Core and Distribution areas are excluded. For those shared programs with less than six credit hours, the total hours for the program must be completed at the college awarding the certificate.

3. Have filed an application for the degree or certificate with the Admissions and Records Office/Office of Student Enrollment Services on the date determined by the college/center.

4. Have a minimum cumulative grade point average of 2.000 at the college granting the degree.

5. Have a minimum cumulative grade point average of 2.000 in all courses used to fulfill degree requirements. Some specific programs have higher grade requirements. It is the student’s responsibility to be aware of these program requirements.

6. Have removed, thirty (30) days after the anticipated graduation date, all deficiencies on the record to use those courses toward program completion.

7. Have removed any indebtedness to any MCCCD college center.

8. Have paid graduation ceremony fee, if participating in ceremony. See fee schedule for charges. See Graduation with Honors for information on honors designation.
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9. Have removed any indebtedness to any MCCCD college/center.

10. Have a minimum cumulative grade point average of 2.000 in all courses used to fulfill degree requirements. Some specific programs have higher grade requirements. It is the student’s responsibility to be aware of these program requirements.

11. Have removed, thirty (30) days after the anticipated graduation date, all deficiencies on the record to use courses toward program completion.

12. Be credited in the Admissions and Records Office/Office of Student Enrollment with no fewer than 60 semester credit units in courses numbered 100 or above for the Associate in Arts degree, Associate in Science degree and Associate in General Studies degree; 62 semester credit units for the Associate in Applied Science degree; 62 semester credit units for the Associate in Business degree. Minimum semester credit units for completion of major-specific pathway versions of the AA and AS degrees vary slightly by pathway. Refer to the Program (Degree) Search at curriculum.maricopa.edu for credit minimums for individual degree programs. For specific certificate programs, be credited with no fewer than the minimum total of credit units required for the certificate program.

13. Students admitted or readmitted to a public Arizona community college or university during a summer term must follow the requirements of the catalog in effect the following fall semester or of any single catalog in effect during subsequent terms of continuous enrollment.

NOTE: Time Limit for Transfer Coursework

Students should be aware that the receiving institution may have age and credit limits on certain coursework to be used in transfer. Students should be knowledgeable about the policies on time limits for transfer coursework for the institution to which they plan to transfer.

EXAMPLE:

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<thead>
<tr>
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Center for Curriculum and Transfer Articulation, June 25, 2019
Pending Governing Board Approval, August 27, 2019
The general education core of the program of study for an associate degree or a certificate helps students develop a
 broader understanding of themselves, of their relationship with others, and of the richly diverse world in which they
 live. The general education experience at MCCCD is composed of specific elements across the curriculum designed to
 provide the learner with essential knowledge and skills:

- Communication
- Arts and Humanities
- Numeracy
- Scientific Inquiry in the Natural and Social Sciences
- Information Literacy
- Problem-Solving and Critical Thinking
- Cultural Diversity

General Education Designations (example: (FYC), [SB], [HU], etc.)
Effective Fall 2000 the course evaluation and/or general education designation, as listed in the Arizona Course
 Equivalency Guide (CEG) within AZ Transfer, is valid for the term in which the student is awarded credit on the
 transcript. A course evaluation and/or general education designation may be subject to change. Given that
 curriculum is dynamic at both MCCCD and the institutions to which MCCCD students transfer, students have the
 option to petition for general education evaluations and/or general education designations.

The college reserves the right to make necessary course and program changes in order to meet current educational
 standards.

CERTIFICATES/DEGREES

The Maricopa Community Colleges offer Certificates of Completion as well as Associate Degrees, which are
 conferred on students who have completed a program of study. These certificates and degrees are as follows: (1)
 Certificate of Completion (Career Program Specified); (2) Academic Certificate; (3) General Education Certificate;
 (4) Associate in Arts; (5) Associate in Science; (6) Associate in Business; (7) Associate in General Studies; (8)
 Associate in Applied Science (Career Program Specified).

All candidates for a degree and/or certificate must complete the General Graduation Requirements as approved by
 the MCCCD Governing Board.

All students are urged to meet with a faculty advisor, program advisor or counselor as soon as possible to determine
 which program meets their needs and to plan their course of study.

LICENSURE DISCLAIMER

Maricopa Community Colleges courses and programs prepare students for entry into a variety of professions. Many
 of these professions require that a person hold an occupational license or certificate in order to work in a particular
 field. Typically, a person must meet certain legal requirements before obtaining such a license or certificate. These
 requirements are established by county, state or federal agencies, and often are based on a person’s character, or
 whether the person has been convicted of a criminal offense. It is possible for a student who has obtained a degree or
 certificate from a community college to be denied the right to work in a particular profession after completing the
 degree or certificate because of concerns over the student’s character or criminal background. Any student preparing
 to enter a field for which a professional license or certificate is required is strongly advised to consult with the
 appropriate government agency that issues such credentials. That agency can provide the student complete
 information about any requirements the law imposes for working in a particular occupation.

MCCCD General Education Statement

The general education core of the program of study for an associate degree or a certificate helps students develop a
 greater understanding of themselves, of their relationship with others, and of the richly diverse world in which they
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 perspectives, and processes.

Through its general education requirements, the Maricopa County Community College District is committed to
 helping students develop qualities and skills that will serve them throughout their lives. General education
 opportunities encourage students to:

- Build self-awareness, self-respect, and self-confidence
- Recognize and respect the beliefs, traditions, abilities, and customs of all people and all cultures
- Consider the local, global, and environmental impacts of personal, professional, and social decisions and actions
- Access, evaluate, analyze, synthesize, and use information wisely
- Communicate effectively personally, socially, and professionally
- Think critically, make informed decisions, solve problems, and implement decisions
- Consider the ethical implications of their choices
- Value the learning process throughout their lives
- Integrate and connect ideas and events in a historical perspective, and see relationships among the past, the
 present, and the future
- Develop a personal sense of aesthetics
- Use technological resources appropriately and productively
- Work cooperatively and respectfully with others to serve their communities

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MCCCD General Education Statement

The general education core of the program of study for an associate degree or a certificate helps students develop a greater understanding of themselves, of their relationship with others, and of the richly diverse world in which they live. The general education experience provides students with opportunities to explore broad areas of commonly held knowledge and prepares them to contribute to society through personal, social, and professional interactions with others. General education fosters students' personal development by opening them to new directions, perspectives, and processes.

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- Think critically, make informed decisions, solve problems, and implement decisions
- Consider the ethical implications of their choices
- Value the learning process throughout their lives
- Integrate and connect ideas and events in a historical perspective, and see relationships among the past, the present, and the future
- Develop a personal sense of aesthetics
- Use technological resources appropriately and productively
- Work cooperatively and respectfully with others to serve their communities

LICENSURE DISCLAIMER

Maricopa Community Colleges courses and programs prepare students for entry into a variety of professions. Many of these professions require that a person hold an occupational license or certificate in order to work in a particular field. Typically, a person must meet certain legal requirements before obtaining such a license or certificate. These requirements are established by county, state or federal agencies, and often are based on a person’s character, or whether the person has been convicted of a criminal offense. It is possible for a student who has obtained a degree or certificate from a community college to be denied the right to work in a particular profession after completing the degree or certificate because of concerns over the student’s character or criminal background. Any student preparing to enter a field for which a professional license or certificate is required is strongly advised to consult with the appropriate government agency that issues such credentials. That agency can provide the student complete information about any requirements the law imposes for working in a particular occupation.

The college reserves the right to make necessary course and program changes in order to meet current educational standards.

CERTIFICATES/DEGREES

The Maricopa Community Colleges offer Certificates of Completion as well as Associate Degrees, which are conferred on students who have completed a program of study. These certificates and degrees are as follows: (1) Certificate of Completion (Career Program Specified); (2) Academic Certificate; (3) General Education Certificate; (4) Associate in Arts; (5) Associate in Science; (6) Associate in Business; (7) Associate in General Studies; (8) Associate in Applied Science (Career Program Specified).

All candidates for a degree and/or certificate must complete the General Graduation Requirements as approved by the MCCCD Governing Board.

All students are urged to meet with a faculty advisor, program advisor or counselor as soon as possible to determine which program meets their needs and to plan their course of study.

MCCCD General Education Statement

The general education experience at MCCCD is composed of specific elements across the curriculum designed to provide the learner with essential knowledge and skills:

- Communication
- Arts and Humanities
- Numeracy
- Scientific Inquiry in the Natural and Social Sciences
- Information Literacy
- Problem-Solving and Critical Thinking
- Cultural Diversity

General Education Designations (example: FYC, [SB], [HU], etc.)

Effective Fall 2000 the course evaluation and/or general education designation, as listed in the Arizona Course Equivalency Guide (CEG) within AZ Transfer, is valid for the term in which the student is awarded credit on the transcript. A course evaluation and/or general education designation may be subject to change. Given that curriculum is dynamic at both MCCCD and the institutions to which MCCCD students transfer, students have the option to petition for general education evaluations and/or general education designations.

Pending Governing Board Approval, August 27, 2019
FIELDS OF INTEREST

APPLIED TECHNOLOGY
BEHAVIORAL SCIENCES AND HUMAN SERVICES
BUSINESS, ENTREPRENEURIALISM, AND MANAGEMENT
COMPUTER AND INFORMATION TECHNOLOGY
CULTURE AND SOCIETY
EDUCATION
HEALTH SCIENCES
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
VISUAL AND PERFORMING ARTS
CERTIFICATE AND DEGREE PROGRAMS

FIELDS OF INTEREST

APPLIED TECHNOLOGY
BEHAVIORAL SCIENCES AND HUMAN SERVICES
BUSINESS, ENTREPRENEURIALISM, AND MANAGEMENT
COMPUTER AND INFORMATION TECHNOLOGY
CULTURE AND SOCIETY
EDUCATION
HEALTH SCIENCES
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)
VISUAL AND PERFORMING ARTS
FIELD OF INTEREST: APPLIED TECHNOLOGY

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Applied Science Degree (AAS) is recommended for students who wish to gain a depth of technical expertise by completing an occupational program that leads directly into the world of work.
- Certificate of Completion (CCL) is a program of study that is recommended for students who wish to gain technical expertise in an occupational program that requires less time and credit hours to complete than an AAS degree. Some CCLs are also included in the AAS degree program of study.

Denotes Clock Hour Program

CLOCK HOUR PROGRAMS are hands-on, industry-driven, and short-term.

- Certificate of Competency (CCT) is a program of study that is recommended for students who wish to gain expertise in a targeted area leading directly into the world of work. Such programs are offered for a specific length of time based on the total number of hours needed to complete the program.

Denotes Apprenticeship Program

APPRENTICESHIP CERTIFICATE and DEGREE PROGRAMS offer students multiple pathways for those interested in Apprenticeship or Construction Trades programs. The Construction Trades option provides skills and training for quick entry into the construction industry, with programs lasting from 5 to 8 months.

Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

PROGRAMS
(Please click program title for detailed information.)

AIR CONDITIONING/REFRIGERATION/FACILITIES (AAS)
AIR CONDITIONING/REFRIGERATION/FACILITIES (CCL)
AIR CONDITIONING - HVAC TECHNICIAN (CCT)
AIR CONDITIONING - RESIDENTIAL AND LIGHT COMMERCIAL AIR CONDITIONING (CCL)
AUTOMOTIVE - AIR CONDITIONING AND ELECTRICAL ACCESSORIES (CCL)
AUTOMOTIVE - COLLISION REPAIR TECHNICIAN (CCT)
AUTOMOTIVE - AUTOMATIC TRANSMISSION AND TRANSAXLE (CCL)
AUTOMOTIVE - BASIC AUTOMOTIVE MAINTENANCE (CCL)

AUTOMOTIVE BRAKE SYSTEMS (CCL)
AUTOMOTIVE CHASSIS (CCL)
AUTOMOTIVE DRIVE TRAIN (CCL)
AUTOMOTIVE DRIVE TRAINS (CCL)
AUTOMOTIVE ELECTRICAL, HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS (CCL)
AUTOMOTIVE ELECTRONIC/ELECTRICAL SYSTEMS (CCL)
AUTOMOTIVE ENGINE PERFORMANCE (CCL)
AUTOMOTIVE - ENGINE PERFORMANCE AND DIAGNOSIS (CCL)
AUTOMOTIVE ENGINE REPAIR (CCL)
AUTOMOTIVE ENGINE REPAIR AND PERFORMANCE (CCL)
AUTOMOTIVE HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS (CCL)
AUTOMOTIVE MAINTENANCE AND LIGHT REPAIR (CCL)
AUTOMOTIVE MANUAL DRIVE TRAIN AND AXLES (CCL)
AUTOMOTIVE SERVICE (AAS)
AUTOMOTIVE SERVICE (CCL)
AUTOMOTIVE STEERING AND SUSPENSION (CCL)
AUTOMOTIVE SUSPENSION, STEERING AND BRAKES (CCL)
AUTOMOTIVE TECHNOLOGY (AAS)
AUTOMOTIVE TECHNOLOGY (CCL)
CONSTRUCTION TRADES: CARPENTRY (AAS)
CONSTRUCTION TRADES: CARPENTRY (CCL)
CONSTRUCTION TRADES: CONSTRUCTION MANAGEMENT (CCL)
CONSTRUCTION TRADES: CONSTRUCTION WORKER TRAINING FOR CRANES/RIGGING EQUIPMENT (CCL)
CONSTRUCTION TRADES: ELECTRICITY (AAS)
CONSTRUCTION TRADES: ELECTRICITY (CCL)
FIELD OF INTEREST: APPLIED TECHNOLOGY

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Applied Science Degree (AAS) is recommended for students who wish to gain a depth of technical expertise by completing an occupational program that leads directly into the world of work.
- Certificate of Completion (CCL) is a program of study that is recommended for students who wish to gain technical expertise in an occupational program that requires less time and credit hours to complete than an AAS degree. Some CCLs are also included in the AAS degree program of study.

Denotes Clock Hour Program

CLOCK HOUR PROGRAMS are hands-on, industry-driven, and short-term.

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Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

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(Please click program title for detailed information.)

AIR CONDITIONING/REFRIGERATION/FACILITIES (AAS)
AIR CONDITIONING/REFRIGERATION/FACILITIES (CCL)
AIR CONDITIONING - HVAC TECHNICIAN (CCT)
AIR CONDITIONING - RESIDENTIAL AND LIGHT COMMERCIAL AIR CONDITIONING (CCL)
AUTOMOTIVE - AIR CONDITIONING AND ELECTRICAL ACCESSORIES (CCL)
AUTOMOTIVE - COLLISION REPAIR TECHNICIAN (CCT)
AUTOMOTIVE - AUTOMATIC TRANSMISSION AND TRANSAXLE (CCL)
AUTOMOTIVE - BASIC AUTOMOTIVE MAINTENANCE (CCL)

Denotes Apprenticeship Program

AUTOMOTIVE BRAKE SYSTEMS (CCL)
AUTOMOTIVE CHASSIS (CCL)
AUTOMOTIVE DRIVE TRAIN (CCL)
AUTOMOTIVE DRIVE TRAINS (CCL)
AUTOMOTIVE ELECTRICAL, HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS (CCL)
AUTOMOTIVE ELECTRONIC/ELECTRICAL SYSTEMS (CCL)
AUTOMOTIVE ENGINE PERFORMANCE (CCL)
AUTOMOTIVE ENGINE PERFORMANCE AND DIAGNOSIS (CCL)
AUTOMOTIVE ENGINE REPAIR (CCL)
AUTOMOTIVE ENGINE REPAIR AND PERFORMANCE (CCL)
AUTOMOTIVE HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS (CCL)
AUTOMOTIVE MAINTENANCE AND LIGHT REPAIR (CCL)
AUTOMOTIVE MANUAL DRIVE TRAIN AND AXLES (CCL)
AUTOMOTIVE SERVICE (AAS)
AUTOMOTIVE SERVICE (CCL)
AUTOMOTIVE STEERING AND SUSPENSION (CCL)
AUTOMOTIVE SUSPENSION, STEERING AND BRAKES (CCL)
AUTOMOTIVE TECHNOLOGY (AAS)
AUTOMOTIVE TECHNOLOGY (CCL)
CONSTRUCTION TRADES: CARPENTRY (AAS)
CONSTRUCTION TRADES: CARPENTRY (CCL)
CONSTRUCTION TRADES: CONSTRUCTION MANAGEMENT (CCL)
CONSTRUCTION TRADES: CONSTRUCTION WORKER TRAINING FOR CRANES/RIGGING EQUIPMENT (CCL)
CONSTRUCTION TRADES: ELECTRICITY (AAS)
CONSTRUCTION TRADES: ELECTRICITY (CCL)
CONSTRUCTION TRADES: HEAT AND FROST INSULATION (AAS)

CONSTRUCTION TRADES: HEAT AND FROST INSULATION (CCL)

CONSTRUCTION TRADES: IRONWORKING (AAS)

CONSTRUCTION TRADES: IRONWORKING (CCL)

CONSTRUCTION TRADES - MECHANICAL TRADES: PIPEFITTING (CCL)

CONSTRUCTION TRADES - MECHANICAL TRADES: PLUMBING (AAS)

CONSTRUCTION TRADES - MECHANICAL TRADES: PLUMBING (CCL)

CONSTRUCTION TRADES - MECHANICAL TRADES: SHEET METAL (AAS)

CONSTRUCTION TRADES - MECHANICAL TRADES: SHEET METAL (CCL)

CONSTRUCTION TRADES: MILLWRIGHTING (AAS)

CONSTRUCTION TRADES: MILLWRIGHTING (CCL)

CONSTRUCTION TRADES: PAINTING AND DRYWALLING (AAS)

CONSTRUCTION TRADES: PAINTING AND DRYWALLING (CCL)

CONSTRUCTION TRADES: PRE-APPRENTICESHIP (CCL)

ELECTRICAL INSTALLER (CCT)

ELECTRICAL TECHNICIAN (CCT)

ELECTRICAL TECHNOLOGY (AAS)

ELECTRICAL TECHNOLOGY - COMMERCIAL WIRING (CCL)

ELECTRICAL TECHNOLOGY - INDUSTRIAL WIRING (CCL)

ELECTRICAL TECHNOLOGY - RESIDENTIAL WIRING (CCL)

INDUSTRIAL DESIGN TECHNOLOGY (AAS)

INDUSTRIAL DESIGN TECHNOLOGY: DESIGN SPECIALIST: SOLIDWORKS (CCL)

PRODUCTION - CNC MACHINIST (CCT)

PRODUCTION TECHNOLOGY (AAS)

PRODUCTION TECHNOLOGY: CNC TECHNOLOGY (CCL)

PRODUCTION TECHNOLOGY: QUALITY ASSURANCE (CCL)

WASTEWATER TREATMENT (CCL)

WATER RESOURCES TECHNOLOGIES (AAS)

WATER TREATMENT (CCL)

WELDING: COMBINATION (CCT)

WELDING: PIPE AND PLATE (CCT)

WELDING: TIG (GTAW) (CCT)
CONSTRUCTION TRADES: HEAT AND FROST INSULATION (AAS)
CONSTRUCTION TRADES: HEAT AND FROST INSULATION (CCL)
CONSTRUCTION TRADES: IRONWORKING (AAS)
CONSTRUCTION TRADES: IRONWORKING (CCL)
CONSTRUCTION TRADES - MECHANICAL TRADES: PIPEFITTING (CCL)
CONSTRUCTION TRADES - MECHANICAL TRADES: PLUMBING (AAS)
CONSTRUCTION TRADES - MECHANICAL TRADES: PLUMBING (CCL)
CONSTRUCTION TRADES - MECHANICAL TRADES: SHEET METAL (AAS)
CONSTRUCTION TRADES - MECHANICAL TRADES: SHEET METAL (CCL)
CONSTRUCTION TRADES: MILLWRIGHTING (AAS)
CONSTRUCTION TRADES: MILLWRIGHTING (CCL)
CONSTRUCTION TRADES: PAINTING AND DRYWALLING (AAS)
CONSTRUCTION TRADES: PAINTING AND DRYWALLING (CCL)
CONSTRUCTION TRADES: PRE-APPRENTICESHIP (CCL)
ELECTRICAL INSTALLER (CCT)
ELECTRICAL TECHNICIAN (CCT)
ELECTRICAL TECHNOLOGY (AAS)
ELECTRICAL TECHNOLOGY - COMMERCIAL Wiring (CCL)
ELECTRICAL TECHNOLOGY - INDUSTRIAL Wiring (CCL)
ELECTRICAL TECHNOLOGY - RESIDENTIAL Wiring (CCL)
INDUSTRIAL DESIGN TECHNOLOGY (AAS)
INDUSTRIAL DESIGN TECHNOLOGY: DESIGN SPECIALIST; SOLIDWORKS (CCL)
PRODUCTION - CNC MACHINIST (CCT)
PRODUCTION TECHNOLOGY (AAS)
PRODUCTION TECHNOLOGY: CNC TECHNOLOGY (CCL)
PRODUCTION TECHNOLOGY: QUALITY ASSURANCE (CCL)
WASTEWATER TREATMENT (CCL)
WATER RESOURCES TECHNOLOGIES (AAS)
WATER TREATMENT (CCL)
WELDING: COMBINATION (CCT)
WELDING: PIPE AND PLATE (CCT)
WELDING: TIG (GTAW) (CCT)
AIR CONDITIONING/REFRIGERATION/FACILITIES
ASSOCIATE IN APPLIED SCIENCE DEGREE IN AIR CONDITIONING/REFRIGERATION/FACILITIES
(66-74.5 CREDITS; CODE 3587)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: James Kenney

The Associate in Applied Science (AAS) in Air Conditioning/Refrigeration/Facilities program is designed to provide training in the areas of Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R) systems, electricity, electronic controls and instrumentation, hydronics, electro-mechanical devices, and general repair. Students will have an opportunity to learn skills necessary to assess and solve problems quickly in emergency situations, based upon an understanding of regulatory guidelines. The program provides students an opportunity to develop written and verbal communication skills through general education courses.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
+ indicates course has prerequisite and/or corequisites.
= indicates course has prerequisites and/or co-requisites.
++ indicates any module suffixed courses.

Program Prerequisites: None

Required Courses ................................................................. 44-47.5

BPC110 Computer Usage and Applications ........................................ 3
FAC/HVA101+ Refrigeration Applications and Components I ............... 3
FAC/HVA101LL+ Refrigeration Applications and Components I Lab ........ 1
ELC/FAC/HVA105+ Electricity for Industry ..................................... 3
ELC/FAC/HVA105LL+ Electricity for Industry Lab ............................. 1
ELC/FAC/115+ Motors, Controls and Wiring Diagrams ........................ 1
ELC/FAC/115LL+ Motors, Controls and Wiring Diagrams Lab ............ 1
FAC186+ Electro-Mechanical Devices ............................................ 3
FAC/HVA120+ Facilities Air Conditioning Systems .......................... 1
FAC/HVA120LL+ Facilities Air Conditioning Systems Lab ................ 1
FAC220+ Controls and Instrumentation ........................................... 3
FAC220LL+ Controls and Instrumentation Lab ................................. 1
FAC/HVA231 Codes ................................................................ 3
FAC235+ Commercial Air and Water Test and Balance .................... 3
FAC235LL+ Commercial Air and Water Test and Balance Lab ........... 1
HVA103+ Refrigeration Applications and Components II ................. 3
HVA103LL+ Refrigeration Applications and Components II Lab ........ 1
HVA104+ EPA Section 608 Technician Preparation and Certification (0.5) OR Proof of EPA Certification (0) .................................................................................................................. 0-0.5
HVA112+ Heating and Air Conditioning ............................................ 3
HVA112LL+ Heating and Air Conditioning Lab ................................... 1
HVA143 Load Calculation and Duct Design .................................... 1
HVA143L Load Calculation and Duct Design Lab ......................... 1
OSH105AA Construction Safety (3) OR OSCH105AA Construction Safety Lab (3) OR OSCH106AA Industrial Safety (3) OR OSCH106LL+ Industrial Safety Lab (3) OR Proof of OSHA 30-hour card ......................................................... 0-3

General Education Requirements ........................................... 22-27

In Required Courses area, the options for OSH105AA, OSH106AA or Proof of OSHA 30-hour card must be the in-person format.

Program Prerequisites:

Certificate & Degree Programs 2019-2020

ENG101+ First-Year Composition (3) OR ENG107+ First-Year Composition for ESL (3) AND ENG102+ First-Year Composition (3) OR ENG108+ First-Year Composition for ESL (3) OR ENG111+ Technical and Professional Writing (3) ................................................................................................................................. 6
COM100 Introduction to Human Communication (3) OR COM110 Interpersonal Communication (3) OR COM225+ Public Speaking (3) OR COM230 Small Group Communication (3) ............................................................................................................................... 3
CRE101+ College Critical Reading and Critical Thinking (3) OR Equivalent as indicated by assessment (0) ........................................................................................................... 0-3
MAT112+ Mathematical Concepts and Applications (3) OR MAT120 Intermediate Algebra (5) OR MAT121 Intermediate Algebra (4) OR MAT122 Intermediate Algebra (3) OR Equivalent or higher level mathematics course ............................................................................................................................... 3-5

For students intending to transfer to the university, MAT120, MAT121, or MAT122 is recommended.

Any approved general education course from the Humanities, Arts and Design area ........................................ 3
Any approved general education course from the Social-Behavioral Sciences area ........................................ 3
CHM130+ Fundamental Chemistry (3) AND CHM130LL+ Fundamental Chemistry Lab (1) OR
CHM101+ Introduction to Physics (4) OR
PHY111+ General Physics (4) ................................................................ 4

AIR CONDITIONING/REFRIGERATION/FACILITIES
CERTIFICATE OF COMPLETION IN AIR CONDITIONING/REFRIGERATION/FACILITIES
(44-47.5 CREDITS; CODE 5380)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: James Kenney

The Certificate of Completion (CCL) in Air Conditioning/Refrigeration/Facilities program is designed to provide training in the areas of Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R) systems, electricity, electronic controls and instrumentation, hydronics, electro-mechanical devices, and general repair. Students will have an opportunity to learn skills necessary to assess and solve problems quickly in emergency situations, based upon an understanding of regulatory guidelines.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
+ indicates course has prerequisite and/or corequisites.
= indicates course has prerequisites and/or co-requisites.
= indicates any module suffixed courses.
AIR CONDITIONING/REFRIGERATION/FACILITIES
ASSOCIATE IN APPLIED SCIENCE DEGREE IN AIR CONDITIONING/REFRIGERATION/FACILITIES
(CODE 5380)

The Associate in Applied Science (AAS) in Air Conditioning/Refrigeration/Facilities program is designed to provide training in the areas of Heating, Ventilation, Air Conditioning, and Refrigeration (HVAC/R) systems, electricity, electronic controls and instrumentation, hydronics, electro-mechanical devices, and general repair. Students will have an opportunity to learn skills necessary to assess and solve problems quickly in emergency situations, based upon an understanding of regulatory guidelines. The program provides students an opportunity to develop written and verbal communication skills through general education courses.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
+ indicates course has prerequisite and/or corequisites.
++ indicates any module suffixed courses.

Program Prerequisites: None

Required Courses

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BPC110</td>
<td>Computer Usage and Applications</td>
<td>3</td>
</tr>
<tr>
<td>FAC/HVA101+</td>
<td>Refrigeration Applications and Components I</td>
<td>3</td>
</tr>
<tr>
<td>FAC/HVA101LL+</td>
<td>Refrigeration Applications and Components Lab</td>
<td>1</td>
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<tr>
<td>ELC/FAC/HVA105+</td>
<td>Electricity for Industry</td>
<td>3</td>
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<tr>
<td>ELC/FAC/HVA105LL+</td>
<td>Electricity for Industry Lab</td>
<td>1</td>
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<tr>
<td>ELC/FAC115+</td>
<td>Motors, Controls and Wiring Diagrams</td>
<td>1</td>
</tr>
<tr>
<td>FAC186+</td>
<td>Electro-Mechanical Devices</td>
<td>3</td>
</tr>
<tr>
<td>FAC/HVA210+</td>
<td>Facilities Air Conditioning Systems</td>
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<td>FAC220+</td>
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<td>FAC/HVA231+</td>
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<tr>
<td>FAC235+</td>
<td>Commercial Air and Water Test and Balance</td>
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<td>FAC235LL+</td>
<td>Commercial Air and Water Test and Balance Lab</td>
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<td>HVA103+</td>
<td>Refrigeration Applications and Components II</td>
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<td>HVA103LL+</td>
<td>Refrigeration Applications and Components II Lab</td>
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<tr>
<td>HVA104+</td>
<td>EPA Section 608 Technician Preparation and Certification (0.5) OR Proof of EPA Certification (0)</td>
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<td>HVA112+</td>
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<tr>
<td>HVA143</td>
<td>Load Calculation and Duct Design</td>
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<td>OSH105AA</td>
<td>Construction Safety (3)</td>
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<tr>
<td>OSH106AA</td>
<td>Industrial Safety (3)</td>
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General Education Requirements

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ENG101+</td>
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<tr>
<td>ENG107+</td>
<td>First-Year Composition for ESL (3)</td>
<td>AND</td>
</tr>
<tr>
<td>ENG102+</td>
<td>First-Year Composition (3)</td>
<td>OR</td>
</tr>
<tr>
<td>ENG108+</td>
<td>First-Year Composition for ESL (3)</td>
<td>OR</td>
</tr>
<tr>
<td>ENG11+</td>
<td>Technical and Professional Writing</td>
<td>3</td>
</tr>
<tr>
<td>COM100-</td>
<td>Introduction to Human Communication</td>
<td>3</td>
</tr>
<tr>
<td>COM110-</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>COM102+</td>
<td>Public Speaking (3)</td>
<td>OR</td>
</tr>
<tr>
<td>COM230-</td>
<td>Small Group Communication (3)</td>
<td>OR</td>
</tr>
<tr>
<td>CRE101+</td>
<td>College Critical Reading and Critical Thinking (3)</td>
<td>OR</td>
</tr>
<tr>
<td>MAT112+</td>
<td>Mathematical Concepts and Applications (3)</td>
<td>OR</td>
</tr>
<tr>
<td>MAT120+</td>
<td>Intermediate Algebra (5)</td>
<td>OR</td>
</tr>
<tr>
<td>MAT121+</td>
<td>Intermediate Algebra (4)</td>
<td>OR</td>
</tr>
<tr>
<td>MAT122+</td>
<td>Intermediate Algebra (3)</td>
<td>OR</td>
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For students intending to transfer to the university, MAT120, MAT121, or MAT122 is recommended.

Any approved general education course from the Humanities, Arts and Design area | 3 |
Any approved general education course from the Social-Behavioral Sciences area | 3 |
CHM130+ | General Chemistry (3) | AND |
CHM130LL+ | General Chemistry Lab (1) | OR |
PHY101+ | Introduction to Physics (4) | OR |
PHY111+ | General Physics (4) | 4 |

AIR CONDITIONING/REFRIGERATION/FACILITIES
CERTIFICATE OF COMPLETION IN AIR CONDITIONING/REFRIGERATION/FACILITIES
(44-47.5 CREDITS; CODE 5380)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: James Kenney

The Certificate of Completion (CCL) in Air Conditioning/Refrigeration/Facilities program is designed to provide training in the areas of Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R) systems, electricity, electronic controls and instrumentation, hydronics, electro-mechanical devices, and general repair. Students will have an opportunity to learn skills necessary to assess and solve problems quickly in emergency situations, based upon an understanding of regulatory guidelines.

Program Notes:
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+ indicates course has prerequisite and/or corequisites.
++ indicates any module suffixed courses.

In Required Courses area, the options for OSH105AA, OSH106AA or Proof of OSHA 30-hour card must be the in-person format.

Program Prerequisites: None
**AIR CONDITIONING** - **HVAC TECHNICIAN**

CERTIFICATE OF COMPETENCY IN HVAC TECHNICIAN

(728 CREDIT HOURS: 1670-DAY/1672-NIGHT)

Division: Trades & Technology - Construction Trades
Program Manager: R. Mark Woehl

The Certificate of Competency (CCT) for HVAC Technician introduces basic principles and practices of heating, ventilation, and air conditioning (HVAC), occupational safety, and trade-related mathematical and electrical concepts.

Program Notes:
- Standards aligned to industry credentials through The National Center for Construction Education and Research (NCCER).

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPC110</td>
<td>Computer Usage and Applications</td>
<td>3</td>
</tr>
<tr>
<td>FAC/HVA101+</td>
<td>Refrigeration Applications and Components I</td>
<td></td>
</tr>
<tr>
<td>FAC/HVA101LL+</td>
<td>Refrigeration Applications and Components I Lab</td>
<td>1</td>
</tr>
<tr>
<td>ELC/FAC/HVA105+</td>
<td>Electricity for Industry</td>
<td></td>
</tr>
<tr>
<td>ELC/FAC/HVA105LL+</td>
<td>Electricity for Industry Labs</td>
<td>1</td>
</tr>
<tr>
<td>ELC/FAC115+</td>
<td>Motors, Controls and Wiring Diagrams</td>
<td>3</td>
</tr>
<tr>
<td>ELC/FAC115LL+</td>
<td>Motors, Controls and Wiring Diagrams Lab</td>
<td></td>
</tr>
<tr>
<td>FAC186+</td>
<td>Electro-Mechanical Devices</td>
<td>3</td>
</tr>
<tr>
<td>FAC/HVA210+</td>
<td>Facilities Air Conditioning Systems</td>
<td></td>
</tr>
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<td>FAC/HVA210LL+</td>
<td>Facilities Air Conditioning Systems Lab</td>
<td>1</td>
</tr>
<tr>
<td>FAC220+</td>
<td>Controls and Instrumentation</td>
<td></td>
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<tr>
<td>FAC220LL+</td>
<td>Controls and Instrumentation Lab</td>
<td>1</td>
</tr>
<tr>
<td>FAC/HVA231+</td>
<td>Codes</td>
<td>3</td>
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<tr>
<td>FAC235+</td>
<td>Commercial Air and Water Test and Balance</td>
<td></td>
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<tr>
<td>FAC235LL+</td>
<td>Commercial Air and Water Test and Balance Lab</td>
<td>1</td>
</tr>
<tr>
<td>HVA101+</td>
<td>Refrigeration Applications and Components I</td>
<td></td>
</tr>
<tr>
<td>HVA101LL+</td>
<td>Refrigeration Applications and Components I Lab</td>
<td>3</td>
</tr>
<tr>
<td>HVA103+</td>
<td>Refrigeration Applications and Components II</td>
<td></td>
</tr>
<tr>
<td>HVA103LL+</td>
<td>Refrigeration Applications and Components II Lab</td>
<td></td>
</tr>
<tr>
<td>HVA105+</td>
<td>EPA Section 608 Technician Preparation and Certification</td>
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</tr>
<tr>
<td></td>
<td>Proof of EPA Certification (0)</td>
<td>0-0.5</td>
</tr>
<tr>
<td>HVA112+</td>
<td>Heating and Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>HVA112LL+</td>
<td>Heating and Air Conditioning Lab</td>
<td></td>
</tr>
<tr>
<td>HVA143</td>
<td>Load Calculation and Duct Design</td>
<td>3</td>
</tr>
<tr>
<td>OSH105AA</td>
<td>Construction Safety (3) OR</td>
<td></td>
</tr>
<tr>
<td>OSH106AA</td>
<td>Industrial Safety (3) OR</td>
<td>0-3</td>
</tr>
</tbody>
</table>

**Total Program Hours:** 728

---

**AIR CONDITIONING** - **RESIDENTIAL AND LIGHT COMMERCIAL AIR CONDITIONING**

CERTIFICATE OF COMPLETION IN RESIDENTIAL AND LIGHT COMMERCIAL AIR CONDITIONING

(22-25.5 CREDITS; CODE 5542)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: James Kenney

The Certificate of Completion (CCL) in Residential and Light Commercial Air Conditioning program is designed to provide training in the areas of Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R) systems, electricity, electronic controls and general repair. Students will have the opportunity to learn skills necessary to assess and solve problems quickly in emergency situations.

Program Notes:
- Students must earn a grade of C or better for all courses within the program.
- + indicates course has prerequisite and/or corequisite.
- In Required Courses area, the options for OSH105AA, OSH106AA or Proof of OSHA 30-hour card must be the in-person format.
- Completion of District Placement Exam in Mathematics is required before the start of the Residential and Light Commercial Air Conditioning program.

**Program Prerequisites:** None

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPC110</td>
<td>Computer Usage and Applications</td>
<td>3</td>
</tr>
<tr>
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<td>Refrigeration Applications and Components I Lab</td>
<td>1</td>
</tr>
<tr>
<td>ELC/FAC/HVA105+</td>
<td>Electricity for Industry</td>
<td></td>
</tr>
<tr>
<td>ELC/FAC/HVA105LL+</td>
<td>Electricity for Industry Labs</td>
<td>1</td>
</tr>
<tr>
<td>HVA112+</td>
<td>Heating and Air Conditioning</td>
<td>3</td>
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<td>Heating and Air Conditioning Lab</td>
<td></td>
</tr>
<tr>
<td>HVA143</td>
<td>Load Calculation and Duct Design</td>
<td>0-0.5</td>
</tr>
<tr>
<td>OSH105AA</td>
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<td></td>
</tr>
<tr>
<td>OSH106AA</td>
<td>Construction Safety (3) OR</td>
<td>0-3</td>
</tr>
</tbody>
</table>

**Total Program Hours:** 22-25.5

---

**AUTOMOTIVE** - **AIR CONDITIONING AND ELECTRICAL ACCESSORIES**

CERTIFICATE OF COMPLETION IN AIR CONDITIONING AND ELECTRICAL ACCESSORIES

(18 CREDITS; CODE 5435)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: James Kenney

The Certificate of Completion (CCL) in Air Conditioning and Electrical Accessories should prepare students to enter the...
### Certificate & Degree Programs 2019-2020

#### Certificate of Competency in HVAC Technician

Certificate of Competency in HVAC Technician (728 Clock Hours; 1670-Day/1672-Night)

<table>
<thead>
<tr>
<th>Program Notes:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The Certificate of Competency (CCT) for HVAC Technician introduces basic principles and practices of heating, ventilation, and air conditioning (HVAC), occupational safety, and trade-related mathematical and electrical concepts.</td>
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<table>
<thead>
<tr>
<th>Program Notes:</th>
<th></th>
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<tbody>
<tr>
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<td></td>
</tr>
</tbody>
</table>

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISP116</td>
<td>Computer Foundations</td>
<td>24</td>
</tr>
<tr>
<td>COR101</td>
<td>Core: Introduction to Craft Skills</td>
<td>80</td>
</tr>
<tr>
<td>HVC110</td>
<td>HVAC Basics</td>
<td>224</td>
</tr>
<tr>
<td>HVC111</td>
<td>HVAC Systems</td>
<td>132</td>
</tr>
<tr>
<td>HVC112</td>
<td>HVAC Installations</td>
<td>132</td>
</tr>
<tr>
<td>HVC113</td>
<td>HVAC Troubleshooting</td>
<td>136</td>
</tr>
</tbody>
</table>

**Total Program Hours:** 728

#### Program Notes:

- + Indicates course has prerequisites and/or corequisites.
- ++ Indicates any module suffixed courses.

#### AIR CONDITIONING - RESIDENTIAL AND LIGHT COMMERCIAL AIR CONDITIONING

Certificate of Completion in Residential and Light Commercial Air Conditioning (22-25.5 Credits; Code 5542)

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Notes:**

- Students must earn a grade of C or better for all courses within the program.
- + indicates course has prerequisite and/or corequisites.
- In Required Courses area, the options for OSH105AA, OSH106AA or Proof of OSHA 30-hour card must be the in-person format.
- Completion of District Placement Exam in Mathematics is required before the start of the Residential and Light Commercial Air Conditioning program.

**Program Prerequisites:** None

#### Required Courses

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</tr>
<tr>
<td>FAC/HVA112+</td>
<td>Heating and Air Conditioning</td>
<td>3</td>
</tr>
<tr>
<td>FAC/HVA112LL+</td>
<td>Heating and Air Conditioning Lab</td>
<td>1</td>
</tr>
<tr>
<td>OSH105AA</td>
<td>Construction Safety (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>OSH106AA</td>
<td>Industrial Safety (3) OR</td>
<td>3</td>
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</tbody>
</table>

**Total Program Hours:** 728

#### Program Notes:

100

#### OTHER DEGREES AND PROGRAMS

**Certificate of Competency in HVAC Technician**

Certificate of Competency in HVAC Technician (728 Clock Hours; 1670-Day/1672-Night)

<table>
<thead>
<tr>
<th>Division: Trades &amp; Technology - Construction Trades</th>
</tr>
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<tbody>
<tr>
<td>Program Manager: R. Mark Woehl</td>
</tr>
</tbody>
</table>

The Certificate of Competency (CCT) for HVAC Technician introduces basic principles and practices of heating, ventilation, and air conditioning (HVAC), occupational safety, and trade-related mathematical and electrical concepts.

**Program Notes:**

- Standards aligned to industry credentials through The National Center for Construction Education and Research (NCCER).

#### Required Courses

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<td>136</td>
</tr>
</tbody>
</table>

**Total Program Hours:** 728

#### Program Notes:

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- ++ Indicates any module suffixed courses.

#### AUTOMOTIVE - AIR CONDITIONING AND ELECTRICAL ACCESSORIES

Certificate of Completion in Air Conditioning and Electrical Accessories (18 Credits; Code 5435)

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Notes:**

- + Indicates course has prerequisites and/or co-requisites.
- ++ Indicates any module suffixed courses.
### AUTOMOTIVE - COLLISION REPAIR TECHNICIAN

**CERTIFICATE OF COMPETENCY IN COLLISION REPAIR TECHNICIAN**

*(752 CLOCK HOURS; 1606-DAY/1608-NIGHT)*

**Division:** Trades & Technology - Auto Body  
**Program Manager:** R. Mark Woehl

The Certificate of Competency (CCT) in Collision Repair Technician gives students the knowledge and hands-on experience to start a career in the automotive collision repair industry. Learn about metal and plastic repair, gas metal arc welding (GMAW), metal inert gas (MIG) welding, vehicle disassembly/reassembly, estimate reading, coolant removal/replacement, and air conditioning (A/C) discharge/recharge and industry terminology.

**Program Notes:** Standards aligned to industry credentials through the Inter-Industry Conference on Auto Collision Repair (I-CAR) for the following: Non-Structural Technician ProLevel 1, Refinish Technician ProLevel 1.

**Admission Requirements:** Must be able to lift 50 pounds.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISP116 Computer Foundations</td>
<td>24</td>
</tr>
<tr>
<td>ABO103 Introduction to Auto Body Repair</td>
<td>164</td>
</tr>
<tr>
<td>ABO104 Introduction to Automotive Refinishing</td>
<td>164</td>
</tr>
<tr>
<td>ABO203 Advanced Automotive Body Repair</td>
<td>200</td>
</tr>
<tr>
<td>ABO204 Advanced Refinishing Fundamentals</td>
<td>200</td>
</tr>
<tr>
<td><strong>Total Program Hours:</strong></td>
<td><strong>752</strong></td>
</tr>
</tbody>
</table>

### AUTOMOTIVE - BASIC AUTOMOTIVE MAINTENANCE

**CERTIFICATE OF COMPLETION IN BASIC AUTOMOTIVE MAINTENANCE**

*(12 CREDITS; CODE 5944N)*

To qualify, students must earn a grade of C or better in all courses within the program.

**Division:** Industrial Technology  
**Program Director:** Eric Fenske

The Certificate of Completion (CCL) in Basic Automotive Maintenance provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of basic electrical and mechanical maintenance and repair. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification Tests.

**Program Notes:** This program is not eligible for Title IV Federal Financial Aid. Students must earn a grade of C or better for each course listed in the Required Courses area. ++ indicates any suffixed courses.

**Program Prerequisites:** None

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE101 Introduction to Automotive</td>
<td>2</td>
</tr>
<tr>
<td>ASE141 Steering, Suspension and Pre-Alignment (2) OR ASE141AU Steering, Suspension and Pre-Alignment (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE151 Introduction to Brake Systems (2) OR ASE151AU Introduction to Brake Systems (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE161 Basic Automotive Electrical/Electronics (2) OR ASE161AU Basic Automotive Electrical/Electronics (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE162A+ Automotive Battery, Starting and Charging Systems (2) OR ASE162AU+ Automotive Battery, Starting and Charging Systems (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE181 Introduction to Engine Performance (2) OR ASE181AU Introduction to Engine Performance (2)</td>
<td>2</td>
</tr>
</tbody>
</table>

### AUTOMOTIVE - AUTOMATIC TRANSMISSION AND TRANSAXLE

**CERTIFICATE OF COMPLETION IN AUTOMATIC TRANSMISSION AND TRANSAXLE**

*(4 CREDITS; CODE 5930N)*

To qualify, students must earn a grade of C or better in all courses within the program.

**Division:** Industrial Technology  
**Program Director:** Eric Fenske

The Certificate of Completion (CCL) in Automatic Automatic Transmission and Transaxle provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of automatic transmission and transaxle. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A2 Test.

**Program Notes:** Students must earn a grade of C or better in all courses within the program. + indicates course has prerequisites and/or corequisites. ++ indicates any module suffixed courses.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUT103AA Automotive Electrical Systems</td>
<td>6</td>
</tr>
<tr>
<td>AUT107AD+ Automotive Air Conditioning</td>
<td>4</td>
</tr>
<tr>
<td>AUT130 Automotive Quick Service</td>
<td>4</td>
</tr>
<tr>
<td>AUT215AA+ Automotive and Electrical/Electronics Systems II</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Program Hours:</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

### Certificate & Degree Programs 2019-2020

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

**Program Notes:** This program is not eligible for Title IV Federal Financial Aid. Students must earn a grade of C or better for each course listed in the Required Courses area. ++ indicates any suffixed courses.

**Program Prerequisites:** None

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE121 Automatic Transmission and Transaxle (4) OR ASE121AU Automatic Transmission and Transaxle (4)</td>
<td>4</td>
</tr>
<tr>
<td>ASE181AU Introduction to Engine Performance (2) OR ASE181AU Introduction to Engine Performance (2)</td>
<td>2</td>
</tr>
</tbody>
</table>
Certificate & Degree Programs 2019-2020

**Program Notes:**
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any module suffixed courses.

### AUTOMOTIVE - BASIC AUTOMOTIVE MAINTENANCE
**Certificate of Completion in Basic Automotive Maintenance**
(12 Credits; Code 5944N)

To qualify, students must earn a grade of C or better in each course listed in the Required Courses area.
+ indicates any suffixed courses.

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<tr>
<th>Required Courses</th>
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<tbody>
<tr>
<td>ASE101</td>
<td>Introduction to Automotive</td>
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<tr>
<td>ASE141</td>
<td>Steering, Suspension and Pre-Aligment (2) OR</td>
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<tr>
<td>ASE141AU</td>
<td>Steering, Suspension and Pre-Aligment (2)</td>
</tr>
<tr>
<td>ASE151</td>
<td>Introduction to Brake Systems (2) OR</td>
</tr>
<tr>
<td>ASE151AU</td>
<td>Introduction to Brake Systems (2) OR</td>
</tr>
<tr>
<td>ASE161</td>
<td>Basic Automotive Electrical/Electronics (2) OR</td>
</tr>
<tr>
<td>ASE161AU</td>
<td>Basic Automotive Electrical/Electronics (2)</td>
</tr>
<tr>
<td>ASE162+</td>
<td>Automotive Battery, Starting and Charging Systems (2) OR</td>
</tr>
<tr>
<td>ASE162AU+</td>
<td>Automotive Battery, Starting and Charging Systems (2)</td>
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<tr>
<td>ASE181</td>
<td>Introduction to Engine Performance (2) OR</td>
</tr>
<tr>
<td>ASE181AU</td>
<td>Introduction to Engine Performance (2)</td>
</tr>
</tbody>
</table>

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
Students must earn a grade of C or better for each course listed in the Required Courses area.
++ indicates any suffixed courses.

### AUTOMOTIVE - AUTOMATIC TRANSMISSION AND TRANSAXLE
**Certificate of Completion in Automatic Transmission and Transaxle**
(4 Credits; Code 5930N)

To qualify, students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE121</td>
<td>Automatic Transmission and Transaxle (4) OR</td>
</tr>
<tr>
<td>ASE121AU</td>
<td>Automatic Transmission and Transaxle (4)</td>
</tr>
</tbody>
</table>

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
Students must earn a grade of C or better for each course listed in the Required Courses area.
++ indicates any suffixed courses.

### AUTOMOTIVE - COLLISION REPAIR TECHNICIAN
**Certificate of Competency in Collision Repair Technician**
(752 Clock Hours; 1606-Day/1608-Night)

Program Manager: R. Mark Woehl

The Certificate of Competency (CCT) in Collision Repair Technician gives students the knowledge and hands-on experience to start a career in the automotive collision repair industry. Learn about metal and plastic repair, gas metal arc welding (GMAW), metal inert gas (MIG) welding, vehicle disassembly/reassembly, estimate reading, coolant removal/replacement, and air conditioning (A/C) discharge/recharge and industry terminology.

**Program Notes:**
Standards aligned to industry credentials through the Inter-Industry Conference on Auto Collision Repair (I-ICAR) for the following: Non-Structural Technician ProLevel 1, Refinish Technician ProLevel 1.

<table>
<thead>
<tr>
<th>Admission Requirements: Must be able to lift 50 pounds.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>ISP116</td>
</tr>
<tr>
<td>ABO103</td>
</tr>
<tr>
<td>ABO104</td>
</tr>
<tr>
<td>ABO203</td>
</tr>
<tr>
<td>ABO204</td>
</tr>
<tr>
<td>Total Program Hours:</td>
</tr>
</tbody>
</table>

### AUTOMOTIVE - AUTOMATIC TRANSMISSION AND TRANSAXLE
**Certificate of Completion in Automatic Transmission and Transaxle**
(4 Credits; Code 5930N)

To qualify, students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.
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<th>Certificate &amp; Degree Programs 2019-2020</th>
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<tr>
<td>Certificate of Completion in Automotive Automatic Transmission and Transaxle (4 Credits; Code 5930N)</td>
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<tr>
<td>Program Director: Eric Fenske</td>
</tr>
<tr>
<td>The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A2 Test.</td>
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<td>AUT107AD+</td>
<td>Automotive Air Conditioning</td>
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<tr>
<td>AUT130</td>
<td>Automotive Quick Service</td>
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<tr>
<td>AUT215AA+</td>
<td>Automotive and Electrical/Electronic Systems II</td>
</tr>
</tbody>
</table>

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
Students must earn a grade of C or better in each course listed in the Required Courses area.
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<tr>
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</tr>
<tr>
<td>AUT103AA</td>
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<tr>
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<th>Certificate &amp; Degree Programs 2019-2020</th>
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<tbody>
<tr>
<td>Certificate of Completion (CCL) in Basic Automotive Maintenance provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of basic electrical and mechanical maintenance and repair. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification Tests.</td>
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## AUTOMOTIVE BRAKE SYSTEMS
### CERTIFICATE OF COMPLETION IN AUTOMOTIVE BRAKE SYSTEMS
(4 CREDITS; CODE 5936N)

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Director:** Eric Fenske

The Certificate of Completion (CCL) in Automotive Brake Systems provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of brake systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A5 Test.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

### Program Notes:
- This program is not eligible for Title IV Federal Financial Aid.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ASE151</td>
<td>Introduction to Brake Systems (2)</td>
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<tr>
<td>ASE151AU</td>
<td>Introduction to Brake Systems (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE251</td>
<td>Advanced Brake Systems (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE251AU</td>
<td>Advanced Brake Systems (2)</td>
<td>2</td>
</tr>
</tbody>
</table>

## AUTOMOTIVE CHASSIS
### CERTIFICATE OF COMPLETION IN AUTOMOTIVE CHASSIS
(16 CREDITS; CODE 5952)

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Director:** Eric Fenske

The Certificate of Completion (CCL) in Automotive Chassis provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of suspension, steering, brakes and electrical systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A4, A5 and A6 Tests.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

### Program Notes:
- This program is not eligible for Title IV Federal Financial Aid.
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<tbody>
<tr>
<td>ASE121</td>
<td>Automatic Transmission and Transaxle (4)</td>
<td>4</td>
</tr>
<tr>
<td>ASE121AU</td>
<td>Automatic Transmission and Transaxle (4)</td>
<td>4</td>
</tr>
<tr>
<td>ASE141</td>
<td>Steering, Suspension and Pre-Alignment (2)</td>
<td>2</td>
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<tr>
<td>ASE141AU</td>
<td>Steering, Suspension and Pre-Alignment (2)</td>
<td>2</td>
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<tr>
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<tr>
<td>ASE151AU</td>
<td>Introduction to Brake Systems (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE161</td>
<td>Basic Automotive Electrical/Electronics (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE161AU</td>
<td>Basic Automotive Electrical/Electronics (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE162</td>
<td>Automotive Battery, Starting and Charging Systems (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE162AU</td>
<td>Automotive Battery, Starting and Charging Systems (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE241</td>
<td>Advanced Steering, Suspension and Alignment (2)</td>
<td>2</td>
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<td>ASE241AU</td>
<td>Advanced Steering, Suspension and Alignment (2)</td>
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<tr>
<td>ASE261</td>
<td>Automotive Electrical Diagnostics and Repair (2)</td>
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<td>Automotive Electrical Diagnostics and Repair (2)</td>
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<td>ASE262</td>
<td>Automotive Electronic Control Systems (2)</td>
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<td>ASE262AU</td>
<td>Automotive Electronic Control Systems (2)</td>
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</tbody>
</table>

## AUTOMOTIVE DRIVE TRAIN
### CERTIFICATE OF COMPLETION IN AUTOMOTIVE DRIVE TRAIN
(16 CREDITS; CODE 5956)

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Director:** Eric Fenske

The Certificate of Completion (CCL) in Automotive Drive Train provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of automatic and manual transmissions and drivetrains and electrical systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A2, A3 and A6 Tests.

### Program Notes:
- * indicates course has prerequisites and/or corequisites.
- ** indicates any suffixed courses.
- This program is not eligible for Title IV Federal Financial Aid.

### Program Prerequisites: None

### Required Courses

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<td>ASE121AU</td>
<td>Automatic Transmission and Transaxle (4)</td>
<td>4</td>
</tr>
<tr>
<td>ASE131</td>
<td>Manual Drive Trains and Axles (4)</td>
<td>4</td>
</tr>
<tr>
<td>ASE131AU</td>
<td>Manual Drive Trains and Axles (4)</td>
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## AUTOMOTIVE BRAKE SYSTEMS

**CERTIFICATE OF COMPLETION IN AUTOMOTIVE BRAKE SYSTEMS**  
(4 CREDITS; CODE 5936N)

To qualify, students must earn a grade of C or better in all courses within the program.  
**Division:** Industrial Technology  
**Program Director:** Eric Fenske

The Certificate of Completion (CCL) in Automotive Brake Systems provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of brake systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A5 Test.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

### Program Notes:
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## AUTOMOTIVE CHASSIS

**CERTIFICATE OF COMPLETION IN AUTOMOTIVE CHASSIS**  
(16 CREDITS; CODE 5952)

To qualify, students must earn a grade of C or better in all courses within the program.  
**Division:** Industrial Technology  
**Program Director:** Eric Fenske

The Certificate of Completion (CCL) in Automotive Chassis provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of suspension, steering, brakes and electrical systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A2, A3 and A6 Tests.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

### Program Notes:
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## AUTOMOTIVE DRIVE TRAIN

**CERTIFICATE OF COMPLETION IN AUTOMOTIVE DRIVE TRAIN**  
(16 CREDITS; CODE 5956)

To qualify, students must earn a grade of C or better in all courses within the program.  
**Division:** Industrial Technology  
**Program Director:** Eric Fenske

The Certificate of Completion (CCL) in Automotive Drive Train provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of automatic and manual transmissions and drivetrains and electrical systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A2, A3 and A6 Tests.

### Program Notes:
- This program is not eligible for Title IV Federal Financial Aid.
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<td>ASE141</td>
<td>Steering, Suspension and Pre-Alignment (2)</td>
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AUTOMOTIVE DRIVE TRAINS
CERTIFICATE OF COMPLETION IN AUTOMOTIVE DRIVE TRAINS
(11 CREDITS; CODE 5463N)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Drive Trains is designed to prepare students to enter the suspension, alignment, and brakes service areas of automotive service. Modern laboratory facilities, fully equipped with the latest equipment, may provide students with excellent opportunities for pre-employment experience.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
This program is not eligible for Title IV Federal Financial Aid.

Required Courses .................................................................................................................................................... 11

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<th>Course Title</th>
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<tbody>
<tr>
<td>AUT106AC+</td>
<td>Engine Overhaul and Reconditioning: Heads and Valves</td>
</tr>
<tr>
<td>AUT110AC</td>
<td>Automotive Power Trains</td>
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<tr>
<td>AUT123AA</td>
<td>Automatic Transmissions</td>
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</table>

Program Prerequisites: None

AUTOMOTIVE ELECTRICAL/ELECTRICAL SYSTEMS
CERTIFICATE OF COMPLETION IN AUTOMOTIVE ELECTRICAL/ELECTRICAL SYSTEMS
(8 CREDITS; CODE 5938N)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Electrical/Electrical Systems provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of electronic/electrical systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automoble and Light Truck Certification A6 Test.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.

Required Courses .................................................................................................................................................... 8

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<tr>
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Program Prerequisites: None

CERTIFICATE OF COMPLETION IN AUTOMOTIVE ELECTRONIC/ELECTRICAL SYSTEMS
(8 CREDITS; CODE 5938N)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Electronic/Electrical Systems provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of electronic/electrical systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automoble and Light Truck Certification A6 Test.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.

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<tr>
<td>ASE171</td>
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<tr>
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<td>ASE262AU+</td>
<td>Automotive Electronic Control Systems (2) OR</td>
</tr>
</tbody>
</table>

Program Prerequisites: None

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.
AUTOMOTIVE DRIVE TRAINS
CERTIFICATE OF COMPLETION IN AUTOMOTIVE DRIVE TRAINS (11 CREDITS; CODE 5463N)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Drive Trains is designed to prepare students to enter the suspension, alignment, and brakes service areas of automotive service. Modern laboratory facilities, fully equipped with the latest equipment, may provide students with excellent opportunities for pre-employment experience.

Program Notes:
- Students must earn a grade of C or better in all courses within the program.
- This program is not eligible for Title IV Federal Financial Aid.
- + indicates course has prerequisites and/or corequisites.

Required Courses ...................................................................................................................................................... 11

AUT06A+         Engine Overhaul and Reconditioning: Heads and Valves........................................ 3
AUT110A         Automotive Power Train...................................................................................... 4
AUT123A         Automatic Transmissions...................................................................................... 4

AUTOMOTIVE ELECTRICAL, HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS
CERTIFICATE OF COMPLETION IN AUTOMOTIVE ELECTRICAL, HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS (11 CREDITS; CODE 5948N)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Electrical, Heating, Ventilation and Air Conditioning Systems provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of electrical systems and heating, ventilation and air conditioning. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A7 and A6 Tests.

Program Notes:
- Students must earn a grade of C or better for each course listed in the Required Courses area.
- ++ indicates any suffixed courses.

Required Courses ...................................................................................................................................................... 8

AUT106AC+         Engine Overhaul and Reconditioning: Heads and Valves........................................ 3
AUT107AB         Automatic Transmissions...................................................................................... 4
AUT110AC         Automotive Power Train...................................................................................... 4

AUTOMOTIVE ELECTRONIC/ELECTRICAL SYSTEMS
CERTIFICATE OF COMPLETION IN AUTOMOTIVE ELECTRONIC/ELECTRICAL SYSTEMS (8 CREDITS; CODE 5938N)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Electronic/Electrical Systems provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of electronic/electrical systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A6 Test.

Program Notes:
- Students must earn a grade of C or better for each course listed in the Required Courses area.
- ++ indicates any suffixed courses.

Required Courses ...................................................................................................................................................... 8

ASE161 AU        Basic Automotive Electrical/Electronics (2) OR
ASE161AU       Basic Automotive Electrical/Electronics (2) ......................................................... 2
ASE162+         Automotive Battery, Starting and Charging Systems (2) OR
ASE162AU+       Automotive Battery, Starting and Charging Systems (2) .................................... 2
ASE161+         Automotive Electrical Diagnostics and Repair (2) OR
ASE161AU+       Automotive Electrical Diagnostics and Repair (2) ................................................ 2
ASE162+         Automotive Electronic Control Systems (2) OR
ASE162AU+       Automotive Electronic Control Systems (2) ....................................................... 2

ASE161 AU        Basic Automotive Electrical/Electronics (2) OR
ASE161AU       Basic Automotive Electrical/Electronics (2) ......................................................... 2
ASE162+         Automotive Battery, Starting and Charging Systems (2) OR
ASE162AU+       Automotive Battery, Starting and Charging Systems (2) .................................... 2
ASE171 AU        Automotive Heating, Ventilation and Air Conditioning Systems (3) OR
ASE171AU       Automotive Heating, Ventilation and Air Conditioning Systems (3) .................. 3
ASE162+         Automotive Electrical Diagnostics and Repair (2) OR
ASE162AU+       Automotive Electrical Diagnostics and Repair (2) ................................................ 2
ASE162+         Automotive Electronic Control Systems (2) OR
ASE162AU+       Automotive Electronic Control Systems (2) ....................................................... 2

Program Notes:
- This program is not eligible for Title IV Federal Financial Aid.
- + indicates course has prerequisites and/or corequisites.
- ++ indicates any suffixed courses.
AUTOMOTIVE ENGINE PERFORMANCE

CERTIFICATE OF COMPLETION IN AUTOMOTIVE ENGINE PERFORMANCE
(8 CREDITS; CODE 5942N)

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Eric Fenske

To enter the automotive engine service area. Students can obtain a Certificate of Completion by successfully completing the following courses with a grade of C or better. This course grouping should prepare the student to enter the automotive engine service area.

Program Notes:
- This program is not eligible for Title IV Federal Financial Aid.
- Students must earn a grade of C or better in all courses within the program.
- + indicates course has prerequisites and/or corequisites.
- ++ indicates any module suffixed courses.

Program Prerequisites: None

Required Courses

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASE103AA</td>
<td>Automotive Electrical Systems</td>
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<td>AUT103AA</td>
<td>Automotive Electrical Systems</td>
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<tr>
<td>AUT105AA</td>
<td>Engine Performance and Diagnosis</td>
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</tr>
<tr>
<td>AUT233+</td>
<td>Computerized Engine Control Systems (2) OR</td>
<td>15</td>
</tr>
<tr>
<td>AUT210AA+</td>
<td>Automotive Emission Systems (3)</td>
<td>3</td>
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</tbody>
</table>

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Program Notes:
- This program is not eligible for Title IV Federal Financial Aid.
- + indicates course has prerequisites and/or corequisites.
- ++ indicates any suffixed courses.

Program Prerequisites:

- None

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUT103AA</td>
<td>Automotive Electrical Systems</td>
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</tr>
<tr>
<td>AUT104AA</td>
<td>Automotive Fuel Systems</td>
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<tr>
<td>AUT210AA+</td>
<td>Automotive Emission Systems (3)</td>
<td>3</td>
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</tbody>
</table>

AUTOMOTIVE ENGINE REPAIR

CERTIFICATE OF COMPLETION IN AUTOMOTIVE ENGINE REPAIR
(4 CREDITS; CODE 5928N)

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Eric Fenske

To enter the automotive engine service area. Students can obtain a Certificate of Completion by successfully completing the following courses with a grade of C or better. This course grouping should prepare the student to enter the automotive engine service area.

Program Notes:
- This program is not eligible for Title IV Federal Financial Aid.
- Students must earn a grade of C or better in all courses within the program.
- + indicates course has prerequisites and/or corequisites.
- ++ indicates any module suffixed courses.

Program Prerequisites: None

Required Courses

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<tr>
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<th>Course Title</th>
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<td>ASE102</td>
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<tr>
<td>AUT102AU</td>
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- AND

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<th>Course Title</th>
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<tbody>
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<td>ASE111</td>
<td>Engine Diagnosis and Inspection (2) OR</td>
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<tr>
<td>ASE111AU</td>
<td>Engine Diagnosis and Inspection (2)</td>
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- OR

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ASE113</td>
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</tr>
<tr>
<td>ASE113AU</td>
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</tbody>
</table>
Certificate & Degree Programs 2019-2020

AUTOMOTIVE ENGINE PERFORMANCE
CERTIFICATE OF COMPLETION IN AUTOMOTIVE ENGINE PERFORMANCE
(8 CREDITS; CODE 5942N)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Engine Performance provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of engine performance. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A8 Test.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
++ indicates any suffixed courses.
Students must earn a grade of C or better for each course listed in the Required Courses area.

Program Prerequisites: None

Required Courses .................................................................................................................................................... 15
ASE161 Basic Automotive Electrical/Electronics (2) OR
ASE161AU Basic Automotive Electrical/Electronics (2) ...................................................................................... 2
ASE162+ Automotive Battery, Starting and Charging Systems (2) OR
ASE162AU+ Automotive Battery, Starting and Charging Systems (2) ................................................................. 2
ASE261+ Automotive Electrical Diagnostics and Repair (2) OR
ASE261AU+ Automotive Electrical Diagnostics and Repair (2) ............................................................................ 2
ASE262+ Automotive Electronic Control Systems (2) OR
ASE262AU+ Automotive Electronic Control Systems (2) .................................................................................... 2

AUTOMOTIVE ENGINE REPAIR
CERTIFICATE OF COMPLETION IN AUTOMOTIVE ENGINE REPAIR
(4 CREDITS; CODE 5928N)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Engine Repair provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of engine repair. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A1 Test.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
++ indicates any suffixed courses.
Students must earn a grade of C or better for each course listed in the Required Courses area.

Program Prerequisites: None

Required Courses .................................................................................................................................................... 12
ASE101AA Theory and Fundamentals of Automotive Engine Repair (2) OR
ASE101AU Theory and Fundamentals of Automotive Engine Repair (2) .............................................................. 2
ASE103AA Automotive Electrical Systems ........................................................................................................... 6
ASE104AA Automotive Fuel Systems .................................................................................................................... 3
ASE105AA Engine Performance and Diagnosis .................................................................................................... 3
ASE106AA Engine Repair (4) OR
ASE111AU Engine Repair (4) OR
ASE111AU+ Engine Repair (4) ............................................................................................................................ 4

AUTOMOTIVE - ENGINE PERFORMANCE AND DIAGNOSIS
CERTIFICATE OF COMPLETION IN ENGINE PERFORMANCE AND DIAGNOSIS
(15 CREDITS; CODE 5479N)
To qualify, students must earn a grade of C or better in all courses within the program.

++ Indicates course has prerequisites and/or corequisites.
** Indicates any module suffixed courses.

ASE161 Basic Automotive Electrical/Electronics (2) OR
ASE161AU Basic Automotive Electrical/Electronics (2) ...................................................................................... 2
ASE162+ Automotive Battery, Starting and Charging Systems (2) OR
ASE162AU+ Automotive Battery, Starting and Charging Systems (2) ................................................................. 2
ASE261+ Automotive Electrical Diagnostics and Repair (2) OR
ASE261AU+ Automotive Electrical Diagnostics and Repair (2) ............................................................................ 2
ASE262+ Automotive Electronic Control Systems (2) OR
ASE262AU+ Automotive Electronic Control Systems (2) .................................................................................... 2

ASE113AU Engine Repair (4)
ASE113AU+ Engine Repair (4) ............................................................................................................................ 4
ASE111AA Engine Diagnosis and Inspection (2) OR
ASE111AU Engine Diagnosis and Inspection (2) .................................................................................................... 4
ASE102  Automotive Express Service (2) OR
ASE102AU  Automotive Express Service (2) AND
ASE101AA Engine Repair (4) OR
ASE113AU Engine Repair (4) ............................................................................................................................ 4
**AUTOMOTIVE ENGINE REPAIR AND PERFORMANCE**

**CERTIFICATE OF COMPLETION IN ENGINE REPAIR AND PERFORMANCE**

(20 CREDITS; CODE 5954)

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Director:** Eric Fenske

The Certificate of Completion (CCL) in Automotive Engine Repair and Performance provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of engine repair and performance and electrical systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A1, A6 and A8 Tests.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Additional Information:

Program Notes:

This program is not eligible for Title IV Federal Financial Aid.

++ indicates any suffixed courses.

+ indicates course has prerequisites and/or co-requisites.

Students must earn a grade of C or better in all courses within the program.

++ indicates any suffixed courses.

**Program Prerequisites:** None

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>ASE102</td>
<td>Automotive Express Service (2) OR ASE102AU Automotive Express Service (2)</td>
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<tr>
<td>AND</td>
<td>ASE111 Engine Diagnosis and Inspection (2) OR ASE111AU Engine Diagnosis and Inspection (2)</td>
<td>4</td>
</tr>
<tr>
<td>ASE113</td>
<td>Engine Repair (4) OR ASE113AU Engine Repair (4)</td>
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</tr>
<tr>
<td>ASE161</td>
<td>Basic Automotive Electrical/Electronics (2) OR ASE161AU Basic Automotive Electrical/Electronics (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE162+</td>
<td>Automotive Battery, Starting and Charging Systems (2) OR ASE162AU+ Automotive Battery, Starting and Charging Systems (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE261+</td>
<td>Automotive Electrical Diagnostics and Repair (2) OR ASE261AU+ Automotive Electrical Diagnostics and Repair (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE262+</td>
<td>Automotive Electronic Control Systems (2) OR ASE262AU+ Automotive Electronic Control Systems (2)</td>
<td>2</td>
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<tr>
<td>ASE181</td>
<td>Introduction to Engine Performance (2) OR ASE181AU Introduction to Engine Performance (2)</td>
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<tr>
<td>ASE182+</td>
<td>Fundamentals of Automotive Fuel/Air and Ignition Systems (2) OR ASE182AU+ Fundamentals of Automotive Fuel/Air and Ignition Systems (2)</td>
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<tr>
<td>ASE281+</td>
<td>Computerized Automotive Engine Control Systems (2) OR ASE281AU+ Computerized Automotive Engine Control Systems (2)</td>
<td>2</td>
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<tr>
<td>ASE282+</td>
<td>Advanced Engine Performance Diagnosis (2) OR ASE282AU+ Advanced Engine Performance Diagnosis (2)</td>
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<tr>
<td>ASE263+</td>
<td>Hybrid Vehicle (2) OR ASE263AU+ Hybrid Vehicle (2)</td>
<td>2</td>
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</tbody>
</table>

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Notes:**

- Indicates course has prerequisites and/or co-requisites.

++ Indicates any module suffixed courses.

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**AUTOMOTIVE HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS**

**CERTIFICATE OF COMPLETION IN AUTOMOTIVE HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS**

(3 CREDITS; CODE 5940N)

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Director:** Eric Fenske

The Certificate of Completion (CCL) in Automotive Heating, Ventilation and Air Conditioning (HVAC) Systems provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of HVAC systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A7 Test.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Additional Information:

Program Notes:

This program is not eligible for Title IV Federal Financial Aid.

++ indicates any suffixed courses.

+ Indicates course has prerequisites and/or corequisites.

Students must earn a grade of C or better for each course listed in the Required Courses area.

++ Indicates any suffixed courses.

**Program Prerequisites:** None

**Required Courses**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ASE171</td>
<td>Automotive Heating, Ventilation and Air Conditioning Systems (3) OR ASE171AU Automotive Heating, Ventilation and Air Conditioning Systems (3)</td>
<td>3</td>
</tr>
</tbody>
</table>

**AUTOMOTIVE MAINTENANCE AND LIGHT REPAIR**

**CERTIFICATE OF COMPLETION IN AUTOMOTIVE MAINTENANCE AND LIGHT REPAIR**

(16 CREDITS; CODE 5946)

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Director:** Eric Fenske

The Certificate of Completion (CCL) in Automotive Maintenance and Light Repair provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of basic electrical and mechanical maintenance and repair. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification Tests.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Additional Information:

Program Notes:

- Indicates course has prerequisites and/or co-requisites.

++ Indicates any module suffixed courses.

Students must earn a grade of C or better in all courses within the program.

++ Indicates any suffixed courses.

**Program Prerequisites:** None

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ASE101</td>
<td>Introduction to Automotive</td>
<td>2</td>
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</table>

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**Certificate & Degree Programs 2019-2020**
AUTOMOTIVE ENGINE REPAIR AND PERFORMANCE

CERTIFICATE OF COMPLETION IN ENGINE REPAIR AND PERFORMANCE
(20 CREDITS; CODE 5954)
To qualify, students must earn a grade of C or better in all courses within the program.
Program Director: Eric Fenske
Division: Industrial Technology

The Certificate of Completion (CCL) in Automotive Engine Repair and Performance provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of engine repair and performance and electrical systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automotive and Light Truck Certification A1, A6 and A8 Tests. See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
+ indicates course has prerequisites and/or co-requisites.
++ indicates any suffixed courses.

Program Prerequisites: None

Required Courses ..................................................................................................................................................... 20
ASE102 Automotive Express Service (2) OR
ASE102AU Automotive Express Service (2)
AND
ASE111 Engine Diagnosis and Inspection (2) OR
ASE111AU Engine Diagnosis and Inspection (2) ........................................................................................................... 4
OR
ASE113 Engine Repair (4) OR
ASE113AU Engine Repair (4) ........................................................................................................................................ 4

ASE161 Basic Automotive Electrical/Electronics (2) OR
ASE161AU Basic Automotive Electrical/Electronics (2) ................................................................................................. 2

ASE162+ Automotive Battery, Starting and Charging Systems (2) OR
ASE162AU+ Automotive Battery, Starting and Charging Systems (2) .............................................................................. 2

ASE261+ Automotive Electrical Diagnostics and Repair (2) OR
ASE261AU+ Automotive Electrical Diagnostics and Repair (2) ..................................................................................... 2

ASE262+ Automotive Electronic Control Systems (2) OR
ASE262AU+ Automotive Electronic Control Systems (2) ............................................................................................... 2

ASE181 Introduction to Engine Performance (2) OR
ASE181AU Introduction to Engine Performance (2) ...................................................................................................... 2

ASE182+ Fundamentals of Automotive Fuel/Air and Ignition Systems (2) OR
ASE182AU+ Fundamentals of Automotive Fuel/Air and Ignition Systems (2) ................................................................ 2

ASE281+ Computerized Automotive Engine Control Systems (2) OR
ASE281AU+ Computerized Automotive Engine Control Systems (2) .............................................................................. 2

ASE282 Advanced Engine Performance Diagnosis (2) OR
ASE282AU Advanced Engine Performance Diagnosis (2) OR
ASE283+ Hybrid Vehicle Overview (2) OR
ASE283AU+ Hybrid Vehicle Overview (2) .................................................................................................................... 2

Program Notes:
Students must earn a grade of C or better for each course listed in the Required Courses area.
++ indicates any suffixed courses.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.

Program Prerequisites: None

Required Courses ..................................................................................................................................................... 3
ASE171 Automotive Heating, Ventilation and Air Conditioning Systems (3) OR
ASE171AU Automotive Heating, Ventilation and Air Conditioning Systems (3) ................................................................. 3

AUTOMOTIVE HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS

CERTIFICATE OF COMPLETION IN AUTOMOTIVE HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS
(3 CREDITS; CODE 5940N)
To qualify, students must earn a grade of C or better in all courses within the program.
Program Director: Eric Fenske
Division: Industrial Technology

The Certificate of Completion (CCL) in Automotive Heating, Ventilation and Air Conditioning (HVAC) Systems provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of HVAC systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automotive and Light Truck Certification A7 Test. See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
+ indicates course has prerequisites and/or co-requisites.
++ indicates any suffixed courses.

Program Prerequisites: None

Required Courses ..................................................................................................................................................... 3
ASE101 Introduction to Automotive ......................................................................................................................... 3

AUTOMOTIVE MAINTENANCE AND LIGHT REPAIR

CERTIFICATE OF COMPLETION IN AUTOMOTIVE MAINTENANCE AND LIGHT REPAIR
(16 CREDITS; CODE 5946)
To qualify, students must earn a grade of C or better in all courses within the program.
Program Director: Eric Fenske
Division: Industrial Technology

The Certificate of Completion (CCL) in Automotive Maintenance and Light Repair provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of basic electrical and mechanical maintenance and repair. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automotive and Light Truck Certification Tests. See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Program Notes:
+ indicates course has prerequisites and/or corequisites.
Students must earn a grade of C or better for each course listed in the Required Courses area.
++ indicates any suffixed courses.

Program Prerequisites: None

Required Courses ..................................................................................................................................................... 16
ASE101 Introduction to Automotive ......................................................................................................................... 2
AUTOMOTIVE MANUAL DRIVE TRAIN AND AXLES
CERTIFICATE OF COMPLETION IN AUTOMOTIVE MANUAL DRIVE TRAIN AND AXLES
(4 CREDITS; CODE 5932N)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Manual Drive Train and Axles provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of manual drive train and axles. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile Certification Test.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
Students must earn a grade of C or better for each course listed in the Required Courses area.
++ indicates any suffixed courses.

Program Prerequisites: None

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>ASE113</td>
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</tr>
<tr>
<td>ASE113AU</td>
<td>Manual Drive Trains and Axles (4)</td>
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</table>

See program advisor for additional certificate offerings. The Associate in Applied Science (AAS) in Automotive Service prepares individuals to apply technical knowledge and skills to repair, service, and maintain automobiles. Instruction is in both the theoretical and practical aspects of automotive repair, service and maintenance, and includes brake systems, electrical systems, engine performance, engine repair, suspension and steering, automatic and manual transmissions and drivetrains, and heating and air conditioning systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile Certification Tests (A1 - A8).

Program Notes:
+ indicates course has prerequisites and/or co-requisites.
++ indicates any suffixed courses.
Students must earn a grade of C or better for each course listed in the Required Courses area.

Program Prerequisites: None

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>ASE101</td>
<td>Introduction to Automotive</td>
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<td>ASE102</td>
<td>Automotive Express Service (2)</td>
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<tr>
<td>ASE102AU</td>
<td>Automotive Express Service (2)</td>
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<td>ASE111</td>
<td>Engine Diagnosis and Inspection (2) OR</td>
<td>4</td>
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<tr>
<td>ASE111AU</td>
<td>Engine Diagnosis and Inspection (2)</td>
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<tr>
<td>ASE111+</td>
<td>Engine Repair (4) OR</td>
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<tr>
<td>ASE113</td>
<td>Engine Repair (4) OR</td>
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<tr>
<td>ASE121</td>
<td>Automatic Transmission and Transaxle (4) OR</td>
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<td>ASE121AU</td>
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<tr>
<td>ASE131</td>
<td>Manual Drive Trains and Axles (4)</td>
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<td>ASE131AU</td>
<td>Manual Drive Trains and Axles (4)</td>
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<tr>
<td>ASE141</td>
<td>Steering, Suspension and Pre-Alignment (2) OR</td>
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<tr>
<td>ASE141AU</td>
<td>Steering, Suspension and Pre-Alignment (2) OR</td>
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<td>ASE241+</td>
<td>Advanced Steering, Suspension and Alignment (2) OR</td>
<td>2</td>
</tr>
<tr>
<td>ASE241AU+</td>
<td>Advanced Steering, Suspension and Alignment (2) OR</td>
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<td>ASE151</td>
<td>Introduction to Brake Systems (2) OR</td>
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<td>ASE151AU</td>
<td>Introduction to Brake Systems (2)</td>
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<tr>
<td>ASE251+</td>
<td>Advanced Brake Systems (2) OR</td>
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<tr>
<td>ASE251AU+</td>
<td>Advanced Brake Systems (2) OR</td>
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<td>ASE161</td>
<td>Basic Automotive Electrical/Electronics (2) OR</td>
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<td>ASE161AU</td>
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<tr>
<td>ASE162+</td>
<td>Automotive Battery, Starting and Charging Systems (2) OR</td>
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<tr>
<td>ASE162AU+</td>
<td>Automotive Battery, Starting and Charging Systems (2) OR</td>
<td></td>
</tr>
</tbody>
</table>

To qualify, students must earn a grade of C or better in all courses within the program.
AUTOMOTIVE MANUAL DRIVE TRAIN AND AXLES

CERTIFICATE OF COMPLETION IN AUTOMOTIVE MANUAL DRIVE TRAIN AND AXLES
(4 CREDITS; CODE 5932N)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Manual Drive Train and Axles provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of manual drive train and axles. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A3 Test.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
Students must earn a grade of C or better for each course listed in the Required Courses area.
++ indicates any suffixed courses.

Program Prerequisites: None

Required Courses
ASE101  Introduction to Automotive Service (2) OR
ASE102  Automotive Express Service (2)
AND
ASE111AU  Engine Diagnosis and Inspection (2)
ASE111  Engine Diagnosis and Inspection (2) OR
ASE113AU  Engine Repair (4)
ASE113  Engine Repair (4) OR
ASE121AU  Automatic Transmission and Transaxle (4)
ASE121  Automatic Transmission and Transaxle (4) OR
ASE131AU  Manual Drive Trains and Axles (4)
ASE131  Manual Drive Trains and Axles (4) OR
ASE141  Steering, Suspension and Pre-Alignment (2) OR
ASE141AU  Steering, Suspension and Pre-Alignment (2)
ASE151AU  Introduction to Brake Systems (2)
ASE151  Introduction to Brake Systems (2) OR
ASE161AU  Basic Automotive Electrical/Electronics (2)
ASE161  Basic Automotive Electrical/Electronics (2) OR
ASE162AU+  Automotive Battery, Starting and Charging Systems (2) OR
ASE162+  Automotive Battery, Starting and Charging Systems (2) OR
ASE171AU  Automotive Heating, Ventilation and Air Conditioning Systems (3)
ASE171  Automotive Heating, Ventilation and Air Conditioning Systems (3) OR
ASE181AU  Introduction to Engine Performance (2)
ASE181  Introduction to Engine Performance (2) OR
ASE182AU  Automotive Battery, Starting and Charging Systems (2) OR
ASE182+  Automotive Battery, Starting and Charging Systems (2) OR
ASE241AU+  Advanced Steering, Suspension and Alignment (2) OR
ASE241A+  Advanced Steering, Suspension and Alignment (2) OR
ASE251AU+  Advanced Brake Systems (2)
ASE251+  Advanced Brake Systems (2) OR
ASE256AU+  Advanced Brake Systems (2) OR
ASE261AU  Basic Automotive Electrical/Electronics (2) OR
ASE261  Basic Automotive Electrical/Electronics (2) OR
ASE262AU+  Automotive Battery, Starting and Charging Systems (2) OR
ASE262+  Automotive Battery, Starting and Charging Systems (2) OR
ASE290AA  Automotive Service Internship (1)
ASE290A  Automotive Service Internship (1) OR

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed course.
ASE261+ Automotive Electrical Diagnostics and Repair (2) OR
ASE261AU+ Automotive Electrical Diagnostics and Repair (2) ......... 2
ASE262+ Automotive Electronic Control Systems (2) OR
ASE262AU+ Automotive Electronic Control Systems (2) .................. 2
ASE171 Automotive Heating, Ventilation and Air Conditioning Systems (3) OR
ASE171AU Automotive Heating, Ventilation and Air Conditioning Systems (3) .......... 3
ASE181 Introduction to Engine Performance (2) OR
ASE181AU Introduction to Engine Performance (2) .................. 2
ASE182+ Theory and Fundamentals of Automotive Fuel/Air and Ignition Systems (2) OR
ASE182AU Theory and Fundamentals of Automotive Fuel/Air and Ignition Systems (2) ........ 2
ASE281+ Computerized Automotive Engine Control Systems (2) OR
ASE281AU Computerized Automotive Engine Control Systems (2) .................. 2
ASE282+ Advanced Engine Performance Diagnosis (2) OR
ASE282AU Advanced Engine Performance Diagnosis (2) OR
ASE263+ Hybrid Vehicle Overview (2) ........................................ 2

Restricted Electives
ASE264 Advanced Automotive Electrical Systems ........................................ 3
ASE265 Introduction to Electric Drive Vehicles ........................................ 3
ASE266 Electric/Hybrid High Voltage Batteries ....................................... 1
ASE267 Electric Vehicle Operation and Diagnosis .................................. 3
ASE290+ Automotive Service Internship (any sufficed courses) (1-3) ....... 1-3
ASE296+ Cooperative Education (any suffixed courses) (1-3) ................. 1-3
ASE298+ Special Projects (any suffixed courses) (1-3) ........................... 1-3
DIE104 Electrical for Diesel Engines .................................................. 3
DIE106 Mobile Hydraulics and Pneumatics .......................................... 3
DIE108 Heavy Duty Diesel Power Trains ............................................ 3
DIE112 General Diesel Engines ...................................................... 3
MET109 Machine Trades Print Reading ............................................... 3
MET131 Manufacturing Processes and Materials ................................ 3
MFG102 Machine Processes, Theory and Application .......................... 3
CIS106 Industrial Safety ...................................................................... 2
WLD101 Welding I ........................................................................... 2

General Education Requirements ........................................................ 18-23

ENG101+ First-Year Composition (3) OR
ENG107+ First-Year Composition for ESL (3)
ENG102+ First-Year Composition (3) OR
ENG108+ First-Year Composition for ESL (3) OR
ENG111+ Technical and Professional Writing (3) .............................. 6
COM100 Introduction to Human Communication (3) OR
COM110 Interpersonal Communication (3) OR
COM225+ Public Speaking (3) OR
COM230 Small Group Communication (3) ......................................... 3
CRE101+ College Critical Reading and Critical Thinking (3) OR
Equivalent as indicated by assessment (0) ........................................... 0-3

Equivalent as indicated by assessment (0) ........................................... 0-3

Required Courses
ASE102 Automotive Repair (2) OR
ASE102AU Automotive Repair (2)
ASE111 Engine Diagnosis and Inspection (2) OR
ASE111AU Engine Diagnosis and Inspection (2) ................................. 2
ASE113 Engine Repair (4) OR
ASE113AU Engine Repair (4) ...................................................... 4
ASE121 Automatic Transmission and Transaxle (4) OR
ASE121AU Automatic Transmission and Transaxle (4) ...................... 4
ASE131 Manual Drive Trains and Axles (4) OR
ASE131AU Manual Drive Trains and Axles (4) ................................. 4
ASE141 Steering, Suspension and Pre-Alignment (2) OR
ASE141AU Steering, Suspension and Pre-Alignment (2) ................. 2
ASE151 Introduction to Brake Systems (2) OR
ASE151AU Introduction to Brake Systems (2) ................................. 2

Any approved general education course from the Humanities and Fine Arts area ........................................ 3
Any approved general education course from the Social and Behavioral Sciences area .......................... 3

AUTOMOTIVE SERVICE
CERTIFICATE OF COMPLETION IN AUTOMOTIVE SERVICE
(44 CREDITS; CODE 5956)
To qualify, students must earn a grade of C or better in all courses within the program.
Program Director: Eric Fenisek

The Certificate of Completion (CCL) in Automotive Service prepares individuals to apply technical knowledge and skills to repair, service, and maintain automobiles. Instruction is in both the theoretical and practical aspects of automotive repair, service and maintenance, and includes brake systems, electrical systems, engine performance, engine repair, suspension and steering, automatic and manual transmissions and drivetrains, and heating and air conditioning systems. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Mobile Certification Tests (A1 - A8).

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
+ indicates course has prerequisites and/or corequisites.
Students must earn a grade of C or better for each course listed in the Required Courses area.
++ indicates any suffixed courses.

Program Prerequisites: None

Required Courses
ASE101 Introduction to Automotive ................................................. 41
ASE102 Automotive Express Service (2) OR
ASE102AU Automotive Express Service (2)
ASE111 Engine Diagnosis and Inspection (2) OR
ASE111AU Engine Diagnosis and Inspection (2) ................................. 4
ASE113 Engine Repair (4) OR
ASE113AU Engine Repair (4) ...................................................... 4
ASE121 Automatic Transmission and Transaxle (4) OR
ASE121AU Automatic Transmission and Transaxle (4) ...................... 4
ASE131 Manual Drive Trains and Axles (4) OR
ASE131AU Manual Drive Trains and Axles (4) ................................. 4
ASE141 Steering, Suspension and Pre-Alignment (2) OR
ASE141AU Steering, Suspension and Pre-Alignment (2) ................. 2
ASE151 Introduction to Brake Systems (2) OR
ASE151AU Introduction to Brake Systems (2) ................................. 2

* Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.
Certificate & Degree Programs 2019-2020

**Certificate of Completion in Automotive Service**

**44 Credits; Code S956**

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Eric Fenske
Division: Industrial Technology

The Completion of Certification (CCL) in Automotive Service prepares individuals to apply technical knowledge and skills to repair, service, and maintain automobiles. Instruction is in both the theoretical and practical aspects of automotive repair, service and maintenance, and includes brake systems, electrical systems, engine performance, engine repair, suspension and steering, automatic and manual transmissions and drivetrains, and heating and air conditioning systems.

The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Mobile Certification Tests (A1 - A8).

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.

+ indicates course has prerequisites and/or co-requisites.
Students must earn a grade of C or better for each course listed in the Required Courses area.
++ indicates any suffixed courses.

Program Prerequisites: None

**Required Courses**

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<tr>
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<th>Course Title</th>
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<td>Automotive Express Service (2) OR ASE102AU</td>
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<td>Engine Diagnosis and Inspection (2) OR ASE111AU</td>
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<td>ASE121+</td>
<td>Automatic Transmission and Transaxle (4) OR ASE121AU</td>
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<td>ASE131+</td>
<td>Manual Drive Trains and Axles (4) OR ASE131AU</td>
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<tr>
<td>ASE141+</td>
<td>Steering, Suspension and Pre-Alignment (2) OR ASE141AU</td>
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Any approved general education course from the Humanities and Fine Arts area .................................. 3
Any approved general education course from the Social and Behavioral Sciences area .................................. 3

**Supporting Courses**

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<tr>
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<th>Course Title</th>
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<td>ENG101+</td>
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<td>COM110+</td>
<td>Interpersonal Communication (3) OR Small Group Communication (3)</td>
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<td>CRE101+</td>
<td>College Critical Reading and Critical Thinking (3) OR Equivalent as indicated by assessment (0)</td>
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**Restrictive Electives**

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<tr>
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<td>Advanced Automotive Electrical Systems</td>
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<td>ASE265</td>
<td>Introduction to Electric Drive Vehicles</td>
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<td>ASE266</td>
<td>Electric/Hybrid High Voltage Batteries</td>
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<td>ASE267</td>
<td>Electric Vehicle Operation and Diagnosis</td>
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<td>ASE290+</td>
<td>Automotive Service Internship (any suffixed courses)</td>
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<td>ASE296+</td>
<td>Cooperative Education (any suffixed courses)</td>
<td>1-3</td>
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<tr>
<td>ASE298+</td>
<td>Special Projects (any suffixed courses)</td>
<td>1-3</td>
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<tr>
<td>DIE104+</td>
<td>Electrical for Diesel Engines</td>
<td>3</td>
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<tr>
<td>DIE106+</td>
<td>Mobile Hydraulics and Pneumatics</td>
<td>3</td>
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<td>DIE108</td>
<td>Heavy Duty Diesel Power Trains</td>
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<tr>
<td>DIE112</td>
<td>General Diesel Engines</td>
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<td>MFG109</td>
<td>Machine Trades Print Reading</td>
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<td>MFG131</td>
<td>Manufacturing Processes and Materials</td>
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<td>CSH106</td>
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<td>WLD101</td>
<td>Welding I</td>
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**General Education Requirements**

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<tr>
<td>Humanities and Fine Arts</td>
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</table>

Equivalent as indicated by assessment: 0-3

* Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed course.
Certificate & Degree Programs 2019-2020

**AUTOMOTIVE STEERING AND SUSPENSION**

**CERTIFICATE OF COMPLETION IN AUTOMOTIVE STEERING AND SUSPENSION**

(4 CREDITS; CODE 5934N)

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Steering and Suspension provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of steering and suspension. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A4 Test.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

**Program Notes:**

- This program is not eligible for Title IV Federal Financial Aid.
- + indicates course has prerequisites and/or corequisites.
- ++ indicates any module suffixed courses.
- Students must earn a grade of C or better for each course listed in the Required Courses area.

**Program Prerequisites:** None

**Required Courses**

- **ASE141** Steering, Suspension and Pre-Alignment (2) OR **ASE141AU** Steering, Suspension and Pre-Alignment (2) .......................... 2
- **ASE241+** Advanced Steering, Suspension and Alignment (2) OR **ASE241AU+** Advanced Steering, Suspension and Alignment (2) .................. 2

**Program Notes:**

- Students must earn a grade of C or better in all courses within the program.
- + indicates course has prerequisites and/or corequisites.

**Required Courses**

- **ASE141** Steering, Suspension and Pre-Alignment (2) OR **ASE141AU** Steering, Suspension and Pre-Alignment (2) .......................... 2
- **ASE241+** Advanced Steering, Suspension and Alignment (2) OR **ASE241AU+** Advanced Steering, Suspension and Alignment (2) .................. 2

**AUTOMOTIVE SUSPENSION, STEERING AND BRAKES**

**CERTIFICATE OF COMPLETION IN AUTOMOTIVE SUSPENSION, STEERING AND BRAKES**

(18-20 CREDITS; CODE 5439)

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Suspension, Steering and Brakes program is designed to prepare students to enter the suspension, alignment, and brakes service areas of automotive service. Modern laboratory facilities, fully equipped with the latest equipment, provide students with excellent opportunities for pre-employment experience.

The Certificate of Completion in Automotive Suspension, Steering and Brakes is currently not Title IV Federal Financial Aid eligible.

**Program Notes:**

- Students must earn a grade of C or better in all courses within the program.
- + indicates course has prerequisites and/or corequisites.

**Program Prerequisites:** None

**Required Courses**

- **ASE141** Steering, Suspension and Pre-Alignment (2) OR **ASE141AU** Steering, Suspension and Pre-Alignment (2) .......................... 2
- **ASE241+** Advanced Steering, Suspension and Alignment (2) OR **ASE241AU+** Advanced Steering, Suspension and Alignment (2) .................. 2

**Program Notes:**

- Students must earn a grade of C or better in all courses within the program.
- + indicates course has prerequisites and/or corequisites.

**Required Courses**

- **ASE141** Steering, Suspension and Pre-Alignment (2) OR **ASE141AU** Steering, Suspension and Pre-Alignment (2) .......................... 2
- **ASE241+** Advanced Steering, Suspension and Alignment (2) OR **ASE241AU+** Advanced Steering, Suspension and Alignment (2) .................. 2

* Indicates course has prerequisites and/or corequisites.
** Indicates any module suffixed courses.
## Certificate & Degree Programs 2019-2020

### AUTOMOTIVE STEERING AND SUSPENSION

**CERTIFICATE OF COMPLETION IN AUTOMOTIVE STEERING AND SUSPENSION**

(4 CREDITS; CODE 5934N)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Industrial Technology

Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Steering and Suspension provides individuals with the technical knowledge and skills needed by automotive technicians specializing in the area of steering and suspension. The curriculum within this certificate aligns with the Automotive Service Excellence (ASE) Automobile and Light Truck Certification A4 Test.

See program advisor for additional certificate offerings. An Associate in Applied Science (AAS) in Automotive Service is also available.

**Program Notes:**

- This program is not eligible for Title IV Federal Financial Aid.
- + indicates course has prerequisites and/or corequisites.
- Students must earn a grade of C or better for each course listed in the Required Courses area.
- ++ indicates any module suffixed courses.

**Program Prerequisites:** None

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ASE141</td>
<td>Steering, Suspension and Pre-Alignment (2)</td>
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<td>ASE141AU</td>
<td>Steering, Suspension and Pre-Alignment (2)</td>
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<tr>
<td>ASE241+</td>
<td>Advanced Steering, Suspension and Alignment (2)</td>
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<tr>
<td>ASE241AU+</td>
<td>Advanced Steering, Suspension and Alignment (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE251+</td>
<td>Advanced Brake Systems (2)</td>
<td>2</td>
</tr>
<tr>
<td>ASE251AU+</td>
<td>Advanced Brake Systems (2)</td>
<td>2</td>
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<tr>
<td>ASE261+</td>
<td>Automotive Electrical Diagnostics and Repair (2)</td>
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<td>ASE261AU+</td>
<td>Automotive Electrical Diagnostics and Repair (2)</td>
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<td>ASE262+</td>
<td>Automotive Electronic Control Systems (2)</td>
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<td>ASE262AU+</td>
<td>Automotive Electronic Control Systems (2)</td>
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<td>ASE281+</td>
<td>Computerized Automotive Engine Control Systems (2)</td>
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<td>ASE281AU+</td>
<td>Computerized Automotive Engine Control Systems (2)</td>
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<td>ASE282+</td>
<td>Advanced Engine Performance Diagnosis (2)</td>
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<td>ASE282AU+</td>
<td>Advanced Engine Performance Diagnosis (2)</td>
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<td>ASE286+</td>
<td>Hybrid Vehicle Overview (2)</td>
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#### Restricted Electives

<table>
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<tr>
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<th>Course Title</th>
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<tr>
<td>ASE264</td>
<td>Advanced Automotive Electrical Systems</td>
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<td>ASE265</td>
<td>Introduction to Electric Drive Vehicles</td>
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<td>ASE266</td>
<td>Electric/Hybrid High Voltage Batteries</td>
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</tr>
<tr>
<td>ASE267</td>
<td>Electric Vehicle Operation and Diagnosis</td>
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<tr>
<td>ASE290+</td>
<td>Automotive Service Internship (any suffixed courses) (1-3)</td>
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<td>ASE296+</td>
<td>Cooperative Education (any suffixed courses) (1-3)</td>
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<tr>
<td>ASE298+</td>
<td>Special Projects (any suffixed courses) (1-3)</td>
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<tr>
<td>DIE104</td>
<td>Electrical for Diesel Engines I</td>
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<td>DIE106</td>
<td>Mobile Hydraulics and Pneumatics</td>
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<td>Heavy Duty Diesel Power Trains</td>
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<td>DIE112</td>
<td>General Diesel Engines</td>
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<td>MET109</td>
<td>Machine Trades Print Reading</td>
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<td>MET123</td>
<td>Manufacturing Processes and Materials</td>
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<td>WLD101</td>
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### AUTOMOTIVE SUSPENSION, STEERING AND BRAKES

**CERTIFICATE OF COMPLETION IN AUTOMOTIVE SUSPENSION, STEERING AND BRAKES**

(18-20 CREDITS; CODE 5439)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Industrial Technology

Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automatic Suspension, Steering and Brakes program is designed to prepare students to enter the suspension, alignment, and brakes service areas of automotive service. Modern laboratory facilities, fully equipped with the latest equipment, provide students with excellent opportunities for pre-employment experience.

The Certificate of Completion in Automatic Suspension, Steering and Brakes is currently not Title IV Federal Financial Aid eligible.

**Program Notes:**

- Students must earn a grade of C or better in all courses within the program.
- + indicates course has prerequisites and/or corequisites.

**Program Prerequisites:** None

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ASE141</td>
<td>Steering, Suspension and Pre-Alignment (2)</td>
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<tr>
<td>ASE141AU</td>
<td>Steering, Suspension and Pre-Alignment (2)</td>
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<tr>
<td>ASE241+</td>
<td>Advanced Steering, Suspension and Alignment (2)</td>
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<td>ASE241AU+</td>
<td>Advanced Steering, Suspension and Alignment (2)</td>
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<tr>
<td>ASE141</td>
<td>Steering, Suspension and Pre-Alignment (2)</td>
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<tr>
<td>ASE141AU</td>
<td>Steering, Suspension and Pre-Alignment (2)</td>
<td>2</td>
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<tr>
<td>ASE241+</td>
<td>Advanced Steering, Suspension and Alignment (2)</td>
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</tr>
<tr>
<td>ASE241AU+</td>
<td>Advanced Steering, Suspension and Alignment (2)</td>
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<tr>
<td>ASE141</td>
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<td>2</td>
</tr>
<tr>
<td>ASE241AU+</td>
<td>Advanced Steering, Suspension and Alignment (2)</td>
<td>2</td>
</tr>
</tbody>
</table>

**Program Notes:**

- Indicates course has prerequisites and/or co-requisites.
- ++ indicates any module suffixed courses.
AUTOMOTIVE TECHNOLOGY

ASSOCIATE IN APPLIED SCIENCE DEGREE IN AUTOMOTIVE TECHNOLOGY (65-74 CREDITS; CODE 3480)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Industrial Technology
Program Director: Eric Fenske

The Associate in Applied Science (AAS) in Automotive Technology program is designed to prepare students for employment as automotive technicians (mechanics). Instruction is given in both the theoretical and practical aspects of automotive operation, maintenance and service. Instruction includes directed systems (both conventional and electronic), brakes, air conditioning, automotive electricity, tune-up and emission control, suspension, and steering systems. Modern laboratory facilities, fully equipped with the latest equipment, may provide students with excellent opportunities for pre-employment experience.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
* indicates course has prerequisites and/or corequisites.
++ Indicates any module suffixed courses.

Program Prerequisites: None

### Required Courses
------------------------------------------------------------------------------------------------------------------------ 42-45
AUT103AA  Automotive Electrical Systems .......................................................................................................................... 6
AUT104AA+ Automotive Fuel Systems ................................................................................................................................. 3
AUT105AA+ Engine Performance and Diagnosis ..................................................................................................................... 3
AUT106AC+ Engine Overhaul and Reconditioning: Heads and Valves .................................................................................. 3
AUT107AD+ Automotive Air Conditioning .......................................................................................................................... 4
AUT108AA+ Front-End Suspension, Steering and Alignment (6) OR
AUT108AB Front-End Suspension, Steering and Alignment (4) .............................................................................................. 4-6
AUT109AC  Automotive Brake Systems ................................................................................................................................. 4
AUT110AC  Automotive Power Trains .................................................................................................................................... 4
AUT123AA  Automatic Transmissions .................................................................................................................................. 4
AUT130  Automotive Quick Service ........................................................................................................................................ 4
AUT215AA+ Automotive and Electrical/Electronic Systems II (4) OR
AUT215+ Electrical Accessories (3) .................................................................................................................................... 3-4

### Restricted Electives
------------------------------------------------------------------------------------------------------------------------ 6
Student should select six (6) to eight (8) credits from the following courses:

AUT101  Internal Combustion Engines Theory ..................................................................................................................... 3
AUT106AD  Engine Overhaul and Reconditioning Block and Crankshaft .............................................................................. 3
AUT210AA+ Automotive Emission Systems .......................................................................................................................... 3
AUT233+ Computerized Engine Control Systems .................................................................................................................. 3

Any approved general education course from the Humanities, Arts and Design area .................................................. 2-3
Any approved general education course from the Social-Behavioral Sciences area .................................................. 3

Certificate & Degree Programs 2019-2020

AUT240+ Hybrid Vehicle Overview ........................................................................................................................................ 2
AUT270AC+ Automotive Technology Internship ..................................................................................................................... 3
AUT298AC+ Special Projects ..................................................................................................................................................... 3
OSH106AA Industrial Safety ...................................................................................................................................................... 3
WLD101  Welding I ................................................................................................................................................................. 3

General Education Requirements ........................................................................................................................................ 17-21
ENG101+ First-Year Composition (3) OR
ENG107+ First-Year Composition for ESL (3) AND
ENG102+ First-Year Composition (3) OR
ENG108+ First-Year Composition for ESL (3) OR
ENG111+ Technical and Professional Writing (3) .................................................................................................................... 6

Any approved general education course from the Oral Communication area ...................................................... 3
CRE101+ College Critical Reading and Critical Thinking (3) OR Equivalent as indicated by assessment (0) .......................... 0-3
MAT112+ Mathematical Concepts and Applications (3) OR Equivalent course OR satisfactory completion of a higher level mathematics course .......................................................... 3

AUTOMOTIVE TECHNOLOGY

CERTIFICATE OF COMPLETION IN AUTOMOTIVE TECHNOLOGY (48-53 CREDITS; CODE 5480)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Industrial Technology
Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Technology program is designed to prepare students for employment as automotive technicians (mechanics). Instruction is given in both the theoretical and practical aspects of automotive operation, maintenance and service. Instruction includes directed systems (both conventional and electronic), brakes, air conditioning, automotive electricity, tune-up and emission control, suspension, and steering systems. Modern laboratory facilities, fully equipped with the latest equipment, provide students with excellent opportunities for pre-employment experience.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
* indicates course has prerequisites and/or corequisites.
++ Indicates any module suffixed courses.

Program Prerequisites: None

### Required Courses
------------------------------------------------------------------------------------------------------------------------ 42-45
AUT103AA  Automotive Electrical Systems .......................................................................................................................... 6
AUT104AA+ Automotive Fuel Systems .................................................................................................................................. 3
AUT105AA+ Engine Performance and Diagnosis ..................................................................................................................... 3
AUT106AC+ Engine Overhaul and Reconditioning: Heads and Valves .............................................................................. 3
AUT107AD+ Automotive Air Conditioning .......................................................................................................................... 4
AUT108AA  Front-End Suspension, Steering and Alignment (4) OR
AUT108AB Front-End Suspension, Steering and Alignment (4) .............................................................................................. 4-6

Certificate & Degree Programs 2019-2020

AUT240+ Hybrid Vehicle Overview ........................................................................................................................................ 2
AUT270AC+ Automotive Technology Internship ..................................................................................................................... 3
AUT298AC+ Special Projects ..................................................................................................................................................... 3
OSH106AA Industrial Safety ...................................................................................................................................................... 3
WLD101  Welding I ................................................................................................................................................................. 3

General Education Requirements ........................................................................................................................................ 17-21
ENG101+ First-Year Composition (3) OR
ENG107+ First-Year Composition for ESL (3) AND
ENG102+ First-Year Composition (3) OR
ENG108+ First-Year Composition for ESL (3) OR
ENG111+ Technical and Professional Writing (3) .................................................................................................................... 6

Any approved general education course from the Oral Communication area ...................................................... 3
CRE101+ College Critical Reading and Critical Thinking (3) OR Equivalent as indicated by assessment (0) .......................... 0-3
MAT112+ Mathematical Concepts and Applications (3) OR Equivalent course OR satisfactory completion of a higher level mathematics course .......................................................... 3

Any approved general education course from the Humanities, Arts and Design area .................................................. 2-3
Any approved general education course from the Social-Behavioral Sciences area .................................................. 3

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
AUTOMOTIVE TECHNOLOGY

ASSOCIATE IN APPLIED SCIENCE DEGREE IN AUTOMOTIVE TECHNOLOGY (65-74 CREDITS; CODE 3480)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Industrial Technology
Program Director: Eric Fenske

The Associate in Applied Science (AAS) in Automotive Technology program is designed to prepare students for employment as automotive technicians (mechanics). Instruction is given in both the theoretical and practical aspects of automotive operation, maintenance and service. Instruction includes directed systems (both conventional and electronic), brakes, air conditioning, automotive electricity, tune-up and emission control, suspension, and steering systems. Modern laboratory facilities, fully equipped with the latest equipment, provide students with excellent opportunities for pre-employment experience.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.

Program Prerequisites: None

Required Courses ......................................................................................... 42-45

AUT103AA Automotive Electrical Systems .................................................. 6
AUT104AA Automotive Fuel Systems .......................................................... 3
AUT105AA Engine Performance and Diagnosis ......................................... 3
AUT106AC* Engine Overhaul and Reconditioning: Heads and Valves ........ 3
AUT107AD* Automotive Air Conditioning .................................................. 4

AUT108AA Front-End Suspension, Steering and Alignment (6) OR
AUT108AB Front-End Suspension, Steering and Alignment (4) ...................... 4-6

AUT109AC Automotive Brake Systems ....................................................... 4
AUT110AC Automotive Power Trains ......................................................... 4
AUT123AA Automatic Transmissions .......................................................... 4
AUT130 Automotive Quick Service ............................................................. 4

AUT215AA* Automotive and Electrical/Electronic Systems II (4) OR
AUT203+ Electrical Accessories (3) ............................................................ 3-4

Restricted Electives ...................................................................................... 6

Student should select six (6) to eight (8) credits from the following courses:

AUT101 Internal Combustion Engines Theory ............................................ 3
AUT106AD Engine Overhaul and Reconditioning Block and Crankshaft ...... 3

AUT210AA+ Automotive Emission Systems ................................................. 3
AUT233+ Computerized Engine Control Systems .................................... 3

++ Indicates any module suffixed courses.

AUTOMOTIVE TECHNOLOGY

CERTIFICATE OF COMPLETION IN AUTOMOTIVE TECHNOLOGY (48-53 CREDITS; CODE 5480)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Industrial Technology
Program Director: Eric Fenske

The Certificate of Completion (CCL) in Automotive Technology program is designed to prepare students for employment as automotive technicians (mechanics). Instruction is given in both the theoretical and practical aspects of automotive operation, maintenance and service. Instruction includes directed systems (both conventional and electronic), brakes, air conditioning, automotive electricity, tune-up and emission control, suspension, and steering systems. Modern laboratory facilities, fully equipped with the latest equipment, provide students with excellent opportunities for pre-employment experience.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.

Program Prerequisites: None

Required Courses ......................................................................................... 42-45

AUT103AA Automotive Electrical Systems .................................................. 6
AUT104AA+ Automotive Fuel Systems .......................................................... 3
AUT105AA+ Engine Performance and Diagnosis ......................................... 3
AUT106AC† Engine Overhaul and Reconditioning: Heads and Valves ........ 3

AUT107AD† Automotive Air Conditioning .................................................... 4

AUT108AB Front-End Suspension, Steering and Alignment (4) OR
AUT108AA Front-End Suspension, Steering and Alignment (6) ...................... 4-6

* Indicates course has prerequisites and/ or corequisites.
** Indicates any module suffixed courses.
CONSTRUCTION TRADES: CARPENTRY

ASSOCIATE IN APPLIED SCIENCE IN CONSTRUCTION TRADES: CARPENTRY
(60-78 CREDITS; CODE 3424)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Associate in Applied Science (AAS) in Construction Trades: Carpentry program is designed to provide a well-rounded education to the journeyman carpenter/student that will enable the student to enter into supervision or management in the construction industry.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or co-requisites.
++ indicates any suffixed courses.

Program Accreditation/Certification or Licensure Information:

Admission Criteria:
Admission to the program by the following registered apprenticeship program: Southwest Carpenters Training Fund.

Program Prerequisites: None

Required Courses ......................................................................................................................... 27-51

Certificate of Completion in Construction Trades: Carpentry (5395) ........................................ 24-48
BPC/CIS+:+ Any BPC/CIS Business-Personal Computers course OR
Computer Information Systems course(s) ............................................................................... 3

Restricted Electives ....................................................................................................................... 0-11

Students should choose 0-11 credits from the following list of courses to complete a minimum of 60 credits for the AAS degree. Any 100/200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

- BLT+:+ Any BLT Building Safety and Construction Technology course(s)
- BPC+:+ Any BPC Business-Personal Computers course(s)
- CAD+:+ Any CAD Computer Aided Drafting course(s)
- CNS+:+ Any CNS Construction course(s)
- CRP+:+ Any CRP Carpentry: Apprenticeship course(s)
- GBG+:+ Any GBG General Business course(s)
- IND+:+ Any IND Industry course(s)
- MGT+:+ Any MGT Management course(s)
- OSH+:+ Any OSH Occupational Safety and Health course(s)
- SPA+:+ Any SPA Spanish course(s)
- TDR+:+ Any TDR Trade related course(s)
- WLD+:+ Any WLD Welding Technology course(s)

General Education Requirements .............................................................................................. 22-27

- ENG101+ First-Year Composition (3) OR
- ENG107+ First-Year Composition (3) OR ENG111+ Technical and Professional Writing (3) OR
- ENG108+ First-Year Composition for ESL (3) OR
- ENG109+ First-Year Composition for ESL (3) AND
- ENGL1+ Technical and Professional Writing (3) OR
- Equivalent as indicated by assessment (0) ................................................................................. 0-3

- MAT120+ Intermediate Algebra (5) OR
- MAT121+ Intermediate Algebra (4) OR
- MAT122+ Intermediate Algebra (3) OR
- Equivalent course or satisfactory completion of a higher level mathematics course .......... 3-5

Any approved general education course from the Humanities, Arts and Design area............... 3
Any approved general education course from the Social-Behavioral Sciences area ............... 3
Any approved general education course from the Natural Sciences area.............................. 4

CONSTRUCTION TRADES: CARPENTRY

CERTIFICATE OF COMPLETION IN CONSTRUCTION TRADES: CARPENTRY
(24-48 CREDITS; CODE 5395)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades: Carpentry program is designed to provide knowledge and skills in the carpentry trade. These include concrete formwork, framing, exterior finish, interior finish, and interior system, roof and basic metal framing, stair forms, bridge construction and transit level laser.
CONSTRUCTION TRADES: CARPENTRY

ASSOCIATE IN APPLIED SCIENCE IN CONSTRUCTION TRADES: CARPENTRY
(60-78 CREDITS; CODE 3424)

To qualify, students must earn a grade of C or better in all required courses. Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Associate in Applied Science (AAS) in Construction Trades: Carpentry program is designed to provide a well-rounded education to the journeyman carpenter/student that will enable the student to enter into supervision or management in the construction industry.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or co-requisites.
++ indicates any suffixed courses.

Program Accreditation/Certification or Licensure Information:

Admission Criteria:
Admission to the program by the following registered apprenticeship program: Southwest Carpenters Training Fund.

Program Prerequisites: None

Required Courses
AUT109AC Automotive Brake Systems .......................................................... 4
AUT110AC Automotive Power Trains ............................................................... 4
AUT123AA Automatic Transmissions .............................................................. 4
AUT130 Automotive Quick Service ................................................................. 4
AUT215AA+ Automotive and Electrical/Electronic Systems II (4) OR
AUT203+ Electrical Accessories (3) ............................................................... 3-4

Restricted Electives ................................................................. 6-8
Student should select six (6) to eight (8) credits from the following courses:
AUT101 Internal Combustion Engines Theory ............................................ 3
AUT106AD Engine Overhaul and Reconditioning Block and Crankshaft .... 3
AUT210AA+ Automotive Emission Systems ................................................... 3
AUT233+ Computerized Engine Control Systems ......................................... 3
AUT240+ Hybrid Vehicle Overview ............................................................... 2
AUT270AC+ Automotive Technology Internship ........................................... 3
AUT298AC+ Special Projects ................................................................. 3
OSH106AA Industrial Safety ................................................................. 3
WLD101 Welding I .................................................................................. 3

Restricted Electives
AUT233+  Computerized Engine Control Systems ......................................... 3

General Education Requirements ............................................................. 22-27
ENG101+ First-Year Composition (3) OR
ENG107+ First-Year Composition for ESL (3) OR
ENG101+ First-Year Composition (3) OR
ENG107+ First-Year Composition for ESL (3) OR
ENG111+ Technical and Professional Writing (3) ....................................... 6

Any approved general education course from the Oral Communication area except COM225 Public Speaking.

CRE101+ College Critical Reading and Critical Thinking (3) OR
Equivalent as indicated by assessment (0) ............................................... 0-3

MAT120+ Intermediate Algebra (5) OR
MAT121+ Intermediate Algebra (4) OR
MAT122+ Intermediate Algebra (3) OR
Equivalent course or satisfactory completion of a higher level mathematics course ......... 3-5

Any approved general education course from the Humanities, Arts and Design area........................................... 3
Any approved general education course from the Social-Behavioral Sciences area........................................... 3
Any approved general education course from the Natural Sciences area................................................................. 4

Certificate & Degree Programs 2019-2020

Certificate of Completion in Construction Trades: Carpentry
(24-48 CREDITS; CODE 5395)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CLC) in Construction Trades: Carpentry program is designed to provide knowledge and skills in the carpentry trade. This include concrete formwork, framing, exterior finish, interior finish, and interior system, roof and basic metal framing, stair forms, bridge construction and transit level laser.

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
Certificate & Degree Programs 2019-2020

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.

Program Accreditation/Certification or Licensure Information: Journeymen status through the Arizona Department of Economic Security, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:
Admission to the program by the following registered apprenticeship program: Southwest Carpenters Training Fund.

Program Prerequisites: None

Certification of Completion (CCL) in Construction Trades: Construction Management is designed to provide individuals in the construction industry work-ready skill sets in management, leadership, motivation, oral and written communications, problem solving, planning and scheduling, cost awareness and production control, sustainability, time management, and OSHA safety. The skills acquired prepare individuals for a productive career in the construction industry as a foreman, problem solving, planning and scheduling, cost awareness and production control, sustainability, time management, and OSHA safety. The skills acquired prepare individuals for a productive career in the construction industry as a foreman, project manager, and owner. The program provides students a career pathway for entry into the Associate in Applied Science (AAS) in Construction Management.

Apprenticeship Manager: Anna Lopez

Admission Criteria:
Formal application and admission to the program is required through the Maricopa County Risk Management Office.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisite and/or corequisites.

Program Prerequisites: None

CONSTRUCTION TRADES: CONSTRUCTION MANAGEMENT

CERTIFICATE OF COMPLETION IN CONSTRUCTION TRADES: CONSTRUCTION MANAGEMENT
(20-23.5 CREDITS; CODE 5595)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades: Construction Management is designed to provide individuals in the construction industry work-ready skill sets in management, leadership, motivation, oral and written communications, problem solving, planning and scheduling, cost awareness and production control, sustainability, time management, and OSHA safety. The skills acquired prepare individuals for a productive career in the construction industry as a foreman, project manager, and owner. The program provides students a career pathway for entry into the Associate in Applied Science (AAS) in Construction Management.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisite and/or corequisites.

Program Prerequisites: None

CONSTRUCTION TRADES: CONSTRUCTION WORKER TRAINING FOR CRANES/RIGGING EQUIPMENT

CERTIFICATE OF COMPLETION IN CONSTRUCTION TRADES: CONSTRUCTION WORKER TRAINING FOR CRANES/RIGGING EQUIPMENT
(13 CREDITS; CODE 5809N)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades: Construction Worker Training for Cranes/Rigging Equipment program is designed to train construction workers in safety policies and procedures related to construction and maintenance work. Training includes introductory courses in the areas of hoisting equipment operations, including theoretical and practical knowledge and information on the best practices of mobile and overhead crane operation, rigging and hand signaling.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.

Admission Criteria:
Formal application and admission to the program is required through the Maricopa County Risk Management Office or Liberty Crane & Rigging Consultants.

Program Prerequisites: None

Required Courses ............................................................................................................................................ 20-23.5

ABC/MEC/PNT120 Basic Calculations for Construction (1.5)
High school GPA of 2.6 or above OR placement exam if no GPA available (0) ................................................................. 0-1.5

CIS114DE Excel Spreadsheet (3) OR
CON251 Microcomputers for Constructors (3) ................................................................. 3

CON117 Interpersonal Skills, Issues, and Resolutions in Construction ................................................................. 2
CON/IND138 Introduction to Project Management and Resource Control ................................................................. 1
CON/IND140 Construction Scheduling and Time Management ................................................................. 1
CON181 Cost Estimating ................................................................. 3
CON244 Working Drawing Analysis: Blueprint Reading ................................................................. 3
CON252 Building Construction Methods, Materials, and Equipment ................................................................. 3
CON271 Construction Safety ................................................................. 3

CNS/CON290AA Construction Internship (1) OR
CNS/CON290AB Construction Internship (2) OR
CNS/CON290AC Construction Internship (3) ................................................................................................. 1-3
Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.

Program Accreditation/Certification or Licensure Information: Journeymen status through the Arizona Department of Economic Security, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:
Admission to the program by the following registered apprenticeship program: Southwest Carpenters Training Fund.

Program Prerequisites: None

Required Courses

CRP101+ Orientation - Carpentry ............................................................. 3
CRP102+ Safety/Health Certifications for Carpentry .............................................. 3
CRP103+ Tool/Equipment Application .............................................................. 3
CRP104+ Basic Wall Framing ................................................................ 3
CRP121+ Print Reading for Carpentry ......................................................... 3
CRP122+ Bridge Construction ................................................................ 3
CRP123+ Wall Forming ............................................................................. 3
CRP124+ Foundations and Flatwork ............................................................ 3
CRP231+ Basic Roof Framing ..................................................................... 3
CRP232+ Stair & Ramp Forming ................................................................. 3
CRP233+ Basic Metal Framing ................................................................... 3
CRP234+ Transit Level/Laser ....................................................................... 3
CRP241+ Gang Forms/Columns ................................................................. 3
CRP242+ Doors/Door Hardware ................................................................. 3
CRP243+ Scaffold Erector Qualification ....................................................... 3
CRP244+ Cabinet Installation .................................................................. 3

Required Courses

ABC/MEC/PNT120 Basic Calculations for Construction (1.5) OR
High school GPA of 2.6 or above OR placement exam if no GPA available (0) ........................................ 0-1.5

CIS114DE Excel Spreadsheet (3) OR
CON251 Microcomputers for Constructors (3) ................................................. 3

CON117 Interpersonal Skills, Issues, and Resolutions in Construction .................. 2
CON/IND138 Introduction to Project Management and Resource Control .............. 1
CON/IND140 Construction Scheduling and Time Management .......................... 1
CON181 Cost Estimating .............................................................................. 3
CON244 Working Drawing Analysis: Blueprint Reading ................................... 3
CON252 Building Construction Methods, Materials, and Equipment ..................... 3
CON271 Construction Safety ......................................................................... 3
CNS/CON290AA Construction Internship (1) OR
CNS/CON290AB Construction Internship (2) OR
CNS/CON290AC Construction Internship (3) ...................................................... 1-3

CONSTRUCTION TRADES: CONSTRUCTION MANAGEMENT
CERTIFICATE OF COMPLETION IN CONSTRUCTION TRADES: CONSTRUCTION MANAGEMENT
(20.5-23.5 CREDITS; CODE 5595)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Program Coordinator: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades: Construction Management is designed to provide individuals in the construction industry work-ready skill sets in management, leadership, motivation, oral and written communications, problem solving, planning and scheduling, cost awareness and production control, sustainability, time management, and OSHA safety. The skills acquired prepare individuals for a productive career in the construction industry as a foreman, manager, project manager, and owner. The program provides students a career pathway for entry into the Associate in Applied Science (AAS) in Construction Management.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisite and/or corequisites.

Program Prerequisites: None

Required Courses

ABC/MEC/PNT120 Basic Calculations for Construction (1.5) OR
High school GPA of 2.6 or above OR placement exam if no GPA available (0) ........................................ 0-1.5

CIS114DE Excel Spreadsheet (3) OR
CON251 Microcomputers for Constructors (3) ................................................. 3

CON117 Interpersonal Skills, Issues, and Resolutions in Construction .................. 2
CON/IND138 Introduction to Project Management and Resource Control .............. 1
CON/IND140 Construction Scheduling and Time Management .......................... 1
CON181 Cost Estimating .............................................................................. 3
CON244 Working Drawing Analysis: Blueprint Reading ................................... 3
CON252 Building Construction Methods, Materials, and Equipment ..................... 3
CON271 Construction Safety ......................................................................... 3
CNS/CON290AA Construction Internship (1) OR
CNS/CON290AB Construction Internship (2) OR
CNS/CON290AC Construction Internship (3) ...................................................... 1-3

CONSTRUCTION TRADES: CONSTRUCTION WORKER TRAINING FOR CRANES/RIGGING EQUIPMENT
CERTIFICATE OF COMPLETION IN CONSTRUCTION TRADES: CONSTRUCTION WORKER TRAINING FOR CRANES/RIGGING EQUIPMENT
(13 CREDITS; CODE 5809N)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Program Coordinator: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades: Construction Worker Training for Cranes/Rigging Equipment program is designed to train construction workers in safety policies and procedures related to construction and maintenance work. Training includes introductory courses in the areas of hoisting equipment operations, including theoretical and practical knowledge and information on the best practices of mobile and overhead crane operation, rigging and hand signaling.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
This program is not eligible for Title IV Federal Financial Aid.
+ indicates course has prerequisites and/or corequisites.

Admission Criteria:
Formal application and admission to the program is required through the Maricopa County Risk Management Office or Liberty Crane & Rigging Consultants.

Program Prerequisites: None

Required Courses

ABC/MEC/PNT120 Basic Calculations for Construction (1.5) OR
High school GPA of 2.6 or above OR placement exam if no GPA available (0) ........................................ 0-1.5

CIS114DE Excel Spreadsheet (3) OR
CON251 Microcomputers for Constructors (3) ................................................. 3

CON117 Interpersonal Skills, Issues, and Resolutions in Construction .................. 2
CON/IND138 Introduction to Project Management and Resource Control .............. 1
CON/IND140 Construction Scheduling and Time Management .......................... 1
CON181 Cost Estimating .............................................................................. 3
CON244 Working Drawing Analysis: Blueprint Reading ................................... 3
CON252 Building Construction Methods, Materials, and Equipment ..................... 3
CON271 Construction Safety ......................................................................... 3
CNS/CON290AA Construction Internship (1) OR
CNS/CON290AB Construction Internship (2) OR
CNS/CON290AC Construction Internship (3) ...................................................... 1-3
### Construction Trades: Electricity

**Associate in Applied Science in Construction Trades: Electricity (60-87 Credits; Code 3428)**

To qualify, students must earn a grade of C or better in all required courses. 

**Department for Construction Trades:** Business and Industry  
**Apprenticeship Manager:** Anna Lopez

The Associate in Applied Science (AAS) in Construction Trades: Electricity degree is designed to provide apprentices and journeymen with a broadened educational background and leadership skills so that students completing the associate degree program may be better equipped to enter supervisory and managerial positions.

**Program note:**  
Students must earn a grade of C or better for all courses required within the program.  
+ indicates course has prerequisite and/or corequisite.  
++ indicates any module suffixed courses.

#### Program Prerequisites: None

#### Admission Criteria:

Students are admitted to this program through: Phoenix Electrical Joint Apprenticeship Training Committee.

**Certificate of Completion in Construction Trades: Electricity (5428)**

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELA119+</td>
<td>College Critical Reading and Critical Thinking</td>
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<tr>
<td>ELA120+</td>
<td>Technical and Professional Writing</td>
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<tr>
<td>ELA121+</td>
<td>First-Year Composition for ESL I</td>
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<td>ELA122+</td>
<td>First-Year Composition for ESL II</td>
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<td>ELA123+</td>
<td>First-Year Composition for ESL III</td>
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<tr>
<td>ELA124+</td>
<td>First-Year Composition for ESL IV</td>
<td>3</td>
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<tr>
<td>ELA125+</td>
<td>National Electric Code I</td>
<td>3</td>
</tr>
<tr>
<td>ENG107+</td>
<td>First-Year Composition for ESL (3) AND</td>
<td>3</td>
</tr>
<tr>
<td>ENG108+</td>
<td>First-Year Composition for ESL (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>ENG111+</td>
<td>Technical and Professional Writing (3)</td>
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<tr>
<td>COM100</td>
<td>Introduction to Human Communication (3) OR</td>
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</tr>
<tr>
<td>COM110</td>
<td>Interpersonal Communication (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>COM230</td>
<td>Small Group Communication (3)</td>
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<tr>
<td>HEO/MEC122+</td>
<td>Rigging Safety and Equipment</td>
<td>1</td>
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<tr>
<td>HEO/PPT117</td>
<td>Forklift Operations</td>
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<tr>
<td>TDR101+</td>
<td>Construction Soft Skills I: Workplace Skills</td>
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<td>TDR102+</td>
<td>Construction Soft Skills II: Workplace Skills</td>
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<td>TDR103+</td>
<td>Construction Soft Skills III: Workplace Skills</td>
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<td>TDR104+</td>
<td>Construction Soft Skills IV: Workplace Skills</td>
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<tr>
<td>HEO/PPT117</td>
<td>Forklift Operations</td>
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</tr>
<tr>
<td>HEO/PPT117</td>
<td>Forklift Operations</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Restricted Electives

Students should choose zero (0) to eight (8) credits from the following list of courses to complete a minimum of 60 credits for the AAS degree based on their apprenticeship standing upon program enrollment and in consultation with Apprenticeship Program Coordinator. Any 100-200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

- **General Education Requirement:**
  - **English (6 Credits):**
    - ENG101+ First-Year Composition (3) OR ENG107+ First-Year Composition for ESL (3) AND ENG108+ First-Year Composition for ESL (3) OR ENG111+ Technical and Professional Writing (3)...
  - **Humanities, Arts and Design (12 Credits):**
    - ELA113+ Introduction to National Electrical Code (NEC)...
    - COM100 Introduction to Human Communication (3) OR COM110 Interpersonal Communication (3) OR COM230 Small Group Communication (3)...
  - **Science (9 Credits):**
    - MAT10+ Algebra I (3) OR MAT11+ Intermediate Algebra (4) OR MAT12+ Intermediate Algebra (4) OR...
  - **Social and Behavioral Sciences (6 Credits):**
    - COM100 Introduction to Human Communication (3) OR COM110 Interpersonal Communication (3) OR COM230 Small Group Communication (3)...

**Construciton Trades: Electricity Certificate of Completion in Construction Trades: Electricity (30-60 Credits; Code 5428)**

To qualify, students must earn a grade of C or better in all required courses. 

**Department for Construction Trades:** Business and Industry  
**Apprenticeship Manager:** Anna Lopez

The Certificate of Completion (CCL) in Construction Trades: Electricity program is designed to provide knowledge and skills in the electrical building trade. These include use of tools, installation of circuitry, equipment, and special service systems, reading blueprints, and a basic understanding of electronics and electronic devices. Students are admitted to the Certificate of Completion (CCL) in Construction Trades: Electricity program only through the Phoenix Electrical Joint Apprenticeship Training Committee.

**Program note:**  
Students must earn a grade of C or better for all courses required within the program (+) indicates course has prerequisite and/or co-requisite.

**Program Accreditation/Certification or Licensure Information:**  
Journeyman status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ELA11+</td>
<td>Electrician I</td>
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</tr>
<tr>
<td>ELA12+</td>
<td>Construction Electricity I</td>
<td>6</td>
</tr>
<tr>
<td>ELA13+</td>
<td>Construction Electricity II</td>
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<tr>
<td>ELA14+</td>
<td>Construction Electricity III</td>
<td>6</td>
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<td>ELA15+</td>
<td>Construction Electricity IV</td>
<td>3</td>
</tr>
<tr>
<td>ELA16+</td>
<td>National Electric Code I</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Required Electrical Engineering Courses

- **Electrical Engineering Courses (22-27 Credits):**
  - **Mathematics (12 Credits):**
    - MAT120+ Intermediate Algebra (5) OR MAT121+ Intermediate Algebra (4) OR MAT122+ Intermediate Algebra (3) OR...
  - **Science (6 Credits):**
    - ELA113+ Introduction to National Electrical Code (NEC) | 3 |
  - **General Education Requirement:**
    - ENG101+ First-Year Composition (3) OR ENG107+ First-Year Composition for ESL (3) AND ENG108+ First-Year Composition for ESL (3) OR ENG111+ Technical and Professional Writing (3)...

**Certificate & Degree Programs 2019-2020**

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* Indicates course has prerequisites and/or co-requisites.  
** Indicates any module suffixed courses.
CONSTRUCTION TRADES: ELECTRICITY
ASSOCIATE IN APPLIED SCIENCE IN CONSTRUCTION TRADES: ELECTRICITY (60-87 CREDITS; CODE 5428)

To qualify, students must earn a grade of C or better in all required courses.

Program note:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisite and/or corequisites.
++ indicates any module/suffixed courses.

Program Prerequisites: None

Admission Criteria:
Students are admitted to this program through: Phoenix Electrical Joint Apprenticeship Training Committee selection process.

Certificate of Completion in Construction Trades: Electricity (5428) ......................................................... 30-60

Restricted Electives ........................................................................................................................................... 0-8

Students should choose zero (0) to eight (8) credits from the following list of courses to complete a minimum of 60 credits for the AAS degree based on their apprenticeship standing upon program enrollment and in consultation with Apprenticeship Program Coordinator. Any 100-200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

General Education Requirement .................................................................................................................. 22-27

Required Courses ........................................................................................................................................... 30-60

Restricted Electives ........................................................................................................................................... 0-8

Students should choose zero (0) to eight (8) credits from the following list of courses to complete a minimum of 60 credits for the AAS degree based on their apprenticeship standing upon program enrollment and in consultation with Apprenticeship Program Coordinator. Any 100-200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

General Education Requirement .................................................................................................................. 22-27
CONSTRUCTION TRADES: HEAT AND FROST INSULATION

ASSOCIATE IN APPLIED SCIENCE IN CONSTRUCTION TRADES: HEAT AND FROST INSULATION (60-75 CREDITS; CODE 3009)

To qualify, students must earn a grade of C or better in all required courses.

Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Associate in Applied Science (AAS) in Construction Trades: Heat and Frost Insulation degree is designed to provide apprentices and journeymen with a broadened educational background and leadership skills so that students completing the associate degree program may be better equipped to enter supervisory managerial positions.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any module suffixed courses.

Admission Criteria:
Students are admitted to this program through the Heat, Frost, and Asbestos Insulators Joint Apprenticeship and Training Committee (HFA JATC) selection process.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 31-48
Certificate of Completion in Construction Trades: Heat and Frost Insulation (5180) ........................................ 31-48
BPC/CIS++++ Any BPC Business-Personal Computers OR
CIS Computer Information Systems 100/200 level course(s) .................................................................... 3

Restricted Electives ................................................................................................................................. 0-7
Students should select from zero (0) to seven (7) credits from the following courses to complete a minimum of 60 credits for the AAS degree based on their apprenticeship standing upon program enrollment and in consultation with Apprenticeship Program Coordinator. Any 100/200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

BLT++++ Any BLT Building Safety and Construction Technology course(s)
BPC++++ Any BPC Business Personal Computers course(s)
CAD++++ Any CAD Computer Aided Drafting course(s)
CNS++++ Any CNS Construction course(s)
GBS++++ Any GBS General Business course(s)
HFA++++ Any HFA Heat and Frost Technology course(s)
IND++++ Any IND Industry course(s)
MGT++++ Any MGT Management course(s)
OSH++++ Any OSH Occupational Safety and Health course(s)
SPA++++ Any SPA Spanish course(s)
TDR++++ Any TDR Trade related course(s)
WLD++++ Any WLD Welding Technology course(s)

CONSTRUCTION TRADES: HEAT AND FROST INSULATION

CERTIFICATE OF COMPLETION IN CONSTRUCTION TRADES: HEAT AND FROST INSULATION (28-45 CREDITS; CODE 5180)

To qualify, students must earn a grade of C or better in all required courses.

Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades: Heat and Frost Insulation program is designed to provide apprentice insulators with trade related classroom training as required by the U.S. Department of Labor, Bureau of Apprenticeship Training, and the State of Arizona, Apprenticeship Division. It is a program consisting of courses in trade calculations, safety, piping insulation skills, fabrication, shop layout, and pattern making, supervision, blueprints and firestopping.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.

Program Accreditation/Certification or Licensure Information: Journeymen status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship Training.

Admission Criteria:
Admission to the program by the following registered apprenticeship program: Arizona Heat and Frost Insulators Joint Apprenticeship and Training Committee.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 28-45
CONSTRUCTION TRADES: HEAT AND FROST INSULATION

ASSOCIATE IN APPLIED SCIENCE IN CONSTRUCTION TRADES: HEAT AND FROST INSULATION

To qualify, students must earn a grade of C or better in all required courses.

Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Associate in Applied Science (AAS) in Construction Trades: Heat and Frost Insulation degree is designed to provide apprentices and journeymen with a broadened educational background and leadership skills so that students completing the associate degree program may be better equipped to enter supervisory managerial positions.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any module/suffixed courses.

Admission Criteria:
Students are admitted to this program through the Heat, Frost, and Asbestos Insulators Joint Apprenticeship and Training Committee (HFA JATC) selection process.

Program Prerequisites: None

Required Courses ................................................................. 31-48
Certificate of Completion in Construction Trades: Heat and Frost Insulation (5180) ........................................ 28-45
BPC/CIS++++ Any BPC Business-Personal Computers OR
CIS Computer Information Systems 100/200 level course(s) ................................................................. 3

Restricted Electives ........................................................................ 0-7
Students should select from zero (0) to seven (7) credits from the following courses to complete a minimum of 60 credits for the AAS degree based on their apprenticeship standing upon program enrollment and in consultation with Apprenticeship Program Coordinator. Any 100/200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

BLT++++ Any BLT Building Safety and Construction Technology course(s)
BPC++++ Any BPC Business Personal Computers course(s)
CAD++++ Any CAD Computer Aided Drafting course(s)
CNS++++ Any CNS Construction course(s)
GBS++++ Any GBS General Business course(s)
HFA++++ Any HFA Heat and Frost Technology course(s)
IND++++ Any IND Industry course(s)
MGT++++ Any MGT Management course(s)
OSH++++ Any OSH Occupational Safety and Health course(s)
SPA++++ Any SPA Spanish courses(s)
TDR++++ Any TDR Trade related course(s)
WLD++++ Any WLD Welding Technology course(s)

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any module/suffixed courses.

Program Accreditation/Certification or Licensure Information: Journeyman status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training. It is a program consisting of courses in trade calculations, safety, piping insulation skills, fabrication, shop layout, and pattern making, supervision, blueprints and firestopping.

Admission Criteria:
Admission to the program by the following registered apprenticeship program: Arizona Heat and Frost Insulators Joint Apprenticeship and Training Committee.

Program Prerequisites: None

Required Courses ........................................................................ 28-45

Certificate of Completion in Construction Trades: Heat and Frost Insulation (28-45 CREDITS; CODE 5180)

Due to the program requirements, students must earn a grade of C or better in all courses within the program.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any module/suffixed courses.

Program Accreditation/Certification or Licensure Information: Journeyman status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training. It is a program consisting of courses in trade calculations, safety, piping insulation skills, fabrication, shop layout, and pattern making, supervision, blueprints and firestopping.

Admission Criteria:
Admission to the program by the following registered apprenticeship program: Arizona Heat and Frost Insulators Joint Apprenticeship and Training Committee.

Program Prerequisites: None

Required Courses ........................................................................ 28-45
CONSTRUCTION TRADES: IRONWORKING

ASSOCIATE IN APPLIED SCIENCE IN CONSTRUCTION TRADES: IRONWORKING (60-80 CREDITS; CODE 3436)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Associate in Applied Science (AAS) in Construction Trades: Ironworking degree is designed to provide apprentices and journeymen with a broadened educational background and leadership skills so that students completing the associate degree program may be better equipped to enter supervisory managerial positions.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.

Admission Criteria:
Admission to the program is required by the Arizona Field Ironworkers Apprenticeship and Training Program.

Program Prerequisites: None

Required Courses .......................................................... 28-53
Certificate of Completion in Construction Trades: Ironworking (5436) ....................................................... 25-50
BPC/CIS+++++ Any BPC Business-Personal Computers or CIS Computer Information Systems course(s) ....... 3

Restrictions Electives ......................................................... 0-10
Students should choose 0-10 credits from the following list of courses to complete a minimum of 60 credits for the AAS degree. Any 100-200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

BLC+++++ Any BLC Business Liberal Education course(s)
BPC+++++ Any BPC Business-Personal Computers course(s)
CAD+++++ Any CAD Computer-Aided Design course(s)
CNS+++++ Any CNS Construction course(s)
GBS+++++ Any GBS General Business course(s)
INC+++++ Any INC Industry course(s)
IRW+++++ Any IRW Ironworking course(s)
MGT+++++ Any MGT Management course(s)
OSH+++++ Any OSH Occupational Safety and Health course(s)
SPA+++++ Any SPA Spanish course(s)
TDR+++++ Any TDR Trade related course(s)

General Education Requirements ........................................ 22-27

Any approved general education course from the Humanities, Arts and Design area ..................................... 3
Any approved general education course from the Social-Behavioral Sciences area ........................................... 3
Any approved general education course from the Natural Sciences area ......................................................... 4

CONSTRUCTION TRADES: IRONWORKING

CERTIFICATE OF COMPLETION IN CONSTRUCTION TRADES: IRONWORKING (25-50 CREDITS; CODE 5436)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades: Ironworking program is designed to provide comprehensive coursework for Ironworking Apprentices to prepare them for employment in the construction industry. Training will cover all facets of ironworking including blueprint reading, structural steel erection, reinforcing and post-tensioning, rigging, architectural iron work, safety, basic first aid, light industrial construction and welding.

Program Accreditation/Certification or Licensure Information:
Journeyman status through the Arizona Department of Commerce, Registered Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Program Notes:
Students must earn a grade of C or better for all courses within the program.

Program Accreditation/Certification or Licensure Information: Journeyman status through the Arizona Department of Economic Security, Registered Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:
Admission to the program by the following registered apprenticeship program: Ironworkers Joint Apprenticeship Trust.

Program Prerequisites: None

WLD+++++ Any WLD Welding Technology course(s)

General Education Requirements ........................................ 22-27

ENG101+ First-Year Composition (3) OR
ENG107+ First-Year Composition for ESL (3) AND
ENG102+ First-Year Composition (3) OR
ENG108+ First-Year Composition for ESL (3) OR
ENG111+ Technical and Professional Writing (3) ............................................................ 6
COM100 Introduction to Human Communication (3) OR
COM110 Interpersonal Communication (3) OR
COM230 Small Group Communication (3) ................................................................. 3
CRE101+ College Critical Reading and Critical Thinking (3) OR
Equivalent course OR satisfactory completion of a higher level mathematics course .................................... 3-5

Any approved general education course from the Humanities, Arts and Design area ..................................... 3
Any approved general education course from the Social-Behavioral Sciences area ........................................... 3
Any approved general education course from the Natural Sciences area ......................................................... 4
CONSTRUCTION TRADES: IRONWORKING

ASSOCIATE IN APPLIED SCIENCE IN CONSTRUCTION TRADES: IRONWORKING
(60-80 CREDITS; CODE 3436)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Associate in Applied Science (AAS) in Construction Trades: Ironworking degree is designed to provide apprentices and journeymen with a broadened educational background and leadership skills so that students completing the associate degree program may be better equipped to enter supervisory managerial positions.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.

Admission Criteria:
Admission to the program is required by the Arizona Field Ironworkers Apprenticeship and Training Program.

Program Prerequisites: None

Required Courses .................................................................................................................. 28-53
Certificate of Completion in Construction Trades: Ironworking (5436) .................................................. 25-50
BPC/CIS+++++/+ Any BPC Business-Personal Computers or CIS Computer Information Systems course(s) .... 3

Restricted Electives .................................................................................................................. 0-10
Students should choose 0-10 credits from the following list of courses to complete a minimum of 60 credits for the AAS degree. Any 100-200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

BLT++++ Any BLT Building Safety and Construction Technology course(s)
BPC++++ Any BPC Business-Personal Computers course(s)
CAD++++ Any CAD Computer-Aided Drafting course(s)
CN5++++ Any CN5 Construction course(s)
GBS++++ Any GBS General Business course(s)
IND++++ Any IND Industry course(s)
IRW++++ Any IRW Ironworking course(s)
MGT++++ Any MGT Management course(s)
OSH++++ Any OSH Occupational Safety and Health course(s)
SPA++++ Any SPA Spanish course(s)
TDR++++ Any TDR Trade related course(s)

HFA101+ Introduction to Insulation ................................................................. 5
HFA102+ Insulation Tools and Equipment: Use and Care ................................ 3
HFA110+ Math for Heat and Frost Technology .................................................. 5
HFA115+ Fundamental Insulation Skills: Piping I ........................................... 5
HFA150+ Shop Fabrication: Layout and Pattern-Making for Insulators I ....... 5
HFA204 Scaffolding for Insulators ................................................................. 2
HFA215+ Fundamental Insulation Skills: Piping II ......................................... 5
HFA250+ Shop Fabrication: Layout and Pattern-Making for Insulators II ...... 5
HFA260+ Blueprints and Firestopping ............................................................ 5
HFA270+ Supervision for Foreman ............................................................... 5
HFA280+ Introduction to Insulation ............................................................... 5
HFA300+ Insulation Tools and Equipment: Use and Care I ......................... 3
HFA304+ Math for Heat and Frost Technology II ......................................... 5
HFA305+ Fundamental Insulation Skills: Piping III .................................... 5
HFA310+ Shop Fabrication: Layout and Pattern-Making for Insulators III ... 5
HFA320+ Scaffolding for Insulators II ............................................................ 2
HFA325+ Fundamental Insulation Skills: Piping IV ...................................... 5
HFA350+ Shop Fabrication: Layout and Pattern-Making for Insulators IV ... 5
HFA360+ Blueprints and Firestopping II ........................................................ 5
HFA370+ Supervision for Foreman II ............................................................ 5
HFA380+ Introduction to Insulation II ............................................................ 5
HFA400+ Insulation Tools and Equipment: Use and Care IV ................. 3
HFA404+ Math for Heat and Frost Technology V .................................... 5
HFA405+ Fundamental Insulation Skills: Piping V ..................................... 5
HFA410+ Shop Fabrication: Layout and Pattern-Making for Insulators V ... 5
HFA420+ Scaffolding for Insulators III ......................................................... 2
HFA425+ Fundamental Insulation Skills: Piping VI ................................... 5
HFA450+ Shop Fabrication: Layout and Pattern-Making for Insulators VI ... 5
HFA460+ Blueprints and Firestopping III ....................................................... 5
HFA470+ Supervision for Foreman III .......................................................... 5

CONSTRUCTION TRADES: IRONWORKING

CERTIFICATE OF COMPLETION IN CONSTRUCTION TRADES: IRONWORKING
(25-55 CREDITS; CODE 5436)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades: Ironworking program is designed to provide comprehensive coursework for Ironworking Apprentices to prepare them for employment in the construction industry. Training will cover all facets of ironworking including blueprint reading, structural steel erection, reinforcing and post-tensioning, rigging, architectural iron work, safety, basic first aid, light industrial construction and welding.

Program Accreditation/Certification or Licensure Information:
Journeyman status through the Arizona Department of Commerce, Registered Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Program Notes:
Students must earn a grade of C or better for all courses within the program.

Program Prerequisites: None
CONSTRUCTION TRADES - MECHANICAL TRADES: PIPEFITTING

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades - Mechanical Trades: Pipefitting program is designed to provide knowledge and skills in the residential, commercial, industrial, and institutional pipefitting trade. Course work includes safety, material selection, basic and advanced pipefitting calculations and principles of science. Students will also be competent in sources and treatment of public, private, and individual gas, water, heating, waste, and specialized piping systems, cross connection protection, pipe identification, blueprint reading and pipefitting code. Additional related training will include basic electricity and troubleshooting.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any module suffixed courses.

Program Accreditation/Certification or Licensure Information: Journeyman status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:
Admission to the program by the following registered apprenticeship program: Interstate Mechanical Contractors, Inc.

Program Prerequisites:
None

Required Courses

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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>CNS110</td>
<td>Green Construction Overview</td>
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<td>IRW101</td>
<td>Ironworking: Orientation</td>
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<tr>
<td>IRW102</td>
<td>Safety and Health for Ironworking</td>
<td>3</td>
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<tr>
<td>IRW/FIT03</td>
<td>Science, Rigging, and Handling</td>
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<td>IRW104</td>
<td>Ironworking: Blueprint Reading</td>
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<td>IRW105</td>
<td>Ironworking Ill: History</td>
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<td>IRW112</td>
<td>Lead Hazard Training</td>
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<tr>
<td>IRW120</td>
<td>Structural Steel Erection I</td>
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<td>Structural Steel Erection II</td>
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<td>IRW122</td>
<td>Cranes</td>
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<td>IRW130</td>
<td>Reinforcing: Rebar</td>
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<tr>
<td>IRW150</td>
<td>Rigging I</td>
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<tr>
<td>IRW151+</td>
<td>Rigging II</td>
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<tr>
<td>IRW160</td>
<td>Architectural Ironworking I</td>
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<td>IRW161+</td>
<td>Architectural Ironworking II</td>
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<tr>
<td>IRW175</td>
<td>Precast Concrete, Metal Buildings, and Scaffolding</td>
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<td>IND/PNT150</td>
<td>Construction Foreman</td>
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<tr>
<td>ABC/MEC/PNT120</td>
<td>Basic Calculations for Construction</td>
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<td>WLD101</td>
<td>Welding I</td>
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<td>WLD201+</td>
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</tr>
<tr>
<td>TDR/WLD202</td>
<td>Construction Welding III</td>
<td>3</td>
</tr>
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</table>

To qualify, students must earn a grade of C or better in all required courses.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any module suffixed courses.

Program Accreditation/Certification or Licensure Information: Journeyman status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:
Admission to the program by the following registered apprenticeship program: Interstate Mechanical Contractors, Inc.
CONSTRUCTION TRADES - MECHANICAL TRADES: PIPEFITTING

CERTIFICATE OF COMPLETION IN CONSTRUCTION TRADES - MECHANICAL TRADES: PIPEFITTING
(24-48 CREDITS; CODE 5716)

To qualify, students must earn a grade of C or better in all required courses.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 24-48

Students should select from twenty-four (24) to forty-eight (48) credits from the following courses based on their apprenticeship standing upon program enrollment and in consultation with Apprenticeship Program Coordinator.

IRW101+ Ironworking: Orientation ................................................. 3
IRW102 Safety and Health for Ironworking ....................................... 3
IRW103 Science, Rigging, and Hoisting ........................................... 6
IRW104 Ironworking: Blueprint Reading ....................................... 1.5
IRW105 Ironworking III: History ................................................... 3
IRW112 Lead Hazard Training ...................................................... 3
IRW120 Structural Steel Erection I ................................................. 3
IRW121 Structural Steel Erection II ................................................ 3
IRW122 Cranes ............................................................................. 3
IRW130+ Reinforcing: Rebar .......................................................... 3
IRW150 Rigging I ............................................................................ 3
IRW151+ Rigging II ........................................................................ 3
IRW152 Architectural Ironworking I ............................................ 3
IRW160+ Architectural Ironworking II ........................................... 3
IRW165 Precast Concrete, Metal Buildings, and Scaffolding .......... 3
IND/PNT120 Construction Foreman ............................................. 2
ABC/MEC/PNT120 Basic Calculations for Construction ................. 1.5
TDR/WLD201 Welding ............................................................... 6
WLD320+ Welding II ...................................................................... 6
TDR/WLD202 Construction Welding III ........................................ 3

Admission Criteria:
Admission to the program by the following registered apprenticeship program: Interstate Mechanical Contractors, Inc.

* Indicates course has prerequisites and/or corequisites.
** Indicates any module suffixed courses.
CONSTRUCTION TRADES - MECHANICAL TRADES: PLUMBING

COURSE DESCRIPTION:

The Certificate of Completion (CCL) in Construction Trades - Mechanical Trades: Plumbing program is designed to provide knowledge and skills in the residential, commercial, industrial, and institutional plumbing trade. Course work includes safety, material selection, installation of plumbing systems, basic and advanced plumbing calculations and principles of science. Students will also be competent in sources and treatment of public, private, and individual gas, water, heating, waste, and specialized piping systems, cross connection protection, blueprint reading and plumbing code. Additional related training will include basic electricity and troubleshooting related to the plumbing trade.

Program Notes:

Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.

Program Accreditation/Certification or Licensure Information:
Journeyman status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:

Registered apprentice status in the state of Arizona with a trade-specific sponsoring organization.

The Certificate of Completion (CCL) in Construction Trades - Mechanical Trades: Plumbing program is designed to provide knowledge and skills in the residential, commercial, industrial, and institutional plumbing trade. Course work includes safety, material selection, installation of plumbing systems, basic and advanced plumbing calculations and principles of science. Students will also be competent in sources and treatment of public, private, and individual gas, water, heating, waste, and specialized piping systems, cross connection protection, blueprint reading and plumbing code. Additional related training will include basic electricity and troubleshooting related to the plumbing trade.

Program Notes:

Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or co-requisites.

Program Accreditation/Certification or Licensure Information:
Journeyman status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:

Registered apprentice status in the state of Arizona with a trade-specific sponsoring organization.

Program Prerequisites:

None

Required Courses:

20-48

Students must earn a grade of C or better in all courses required within the program.
+ indicates course has prerequisites and/or co-requisites.

Admission Criteria:

Formal application and admission to the program is required by the following apprenticeship program:
- Apprenticeship Program Coordinator.
- Apprenticeship Program Coordinator.

Additional training will include basic electricity and troubleshooting related to the plumbing trade.

Program Notes:

Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisites and/or corequisites.

Program Accreditation/Certification or Licensure Information:
Journeyman status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:

Formal application and admission to the program is required by the following apprenticeship program:
- Apprenticeship Program Coordinator.
- Apprenticeship Program Coordinator.

Additional training will include basic electricity and troubleshooting related to the plumbing trade.

Program Notes:

Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisites and/or corequisites.

Program Accreditation/Certification or Licensure Information:
Journeyman status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:

Formal application and admission to the program is required by the following apprenticeship program:
- Apprenticeship Program Coordinator.
- Apprenticeship Program Coordinator.

Additional training will include basic electricity and troubleshooting related to the plumbing trade.

Program Notes:

Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisites and/or corequisites.

Program Accreditation/Certification or Licensure Information:
Journeyman status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:

Formal application and admission to the program is required by the following apprenticeship program:
- Apprenticeship Program Coordinator.
- Apprenticeship Program Coordinator.
**CONSTRUCTION TRADES - MECHANICAL TRADES: PLUMBING**

**Certificate of Completion in Construction Trades - Mechanical Trades: Plumbing** (20-48 Credits; Code 5336)

To qualify, students must earn a grade of C or better in all required courses. Department for Construction Trades: Business and Industry

Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades - Mechanical Trades: Plumbing program is designed to provide knowledge and skills in the residential, commercial, industrial, and institutional plumbing trade. Course work includes safety, material selection, installation of plumbing systems, and principles of science, Students will also be competent in sources, treatment of public, private, and individual gas, water, heating, waste, and specialized piping systems, cross connection protection, blueprint reading, and plumbing code. Additional related training will include basic electricity and troubleshooting related to the plumbing trade.

**Program Notes:**

Students must earn a grade of C or better in all courses within the program.

* indicates course has prerequisites and/or corequisites.

Program Accreditation/Certification or Licensure Information:

Journeyman status through the Arizona Department of Commerce, Apprentice Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:

Registered apprentice status in the state of Arizona with a trade-specific sponsoring organization.

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<td>COM100</td>
<td>Introduction to Human Communication (3) OR</td>
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<td>ELC</td>
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Any approved general education course from the Humanities, Arts and Design area

Any approved general education course from the Social-Behavioral Sciences area

**CONSTRUCTION TRADES - MECHANICAL TRADES: SHEET METAL**

**Associate in Applied Science in Construction Trades - Mechanical Trades: Sheet Metal** (60-78 Credits; Code 3077)

To qualify, students must earn a grade of C or better in all required courses. Department for Construction Trades: Business and Industry

Apprenticeship Manager: Anna Lopez

The Associate in Applied Science (AAS) in Construction Trades - Mechanical Trades: Sheet Metal program is designed to provide knowledge in the sheet metal trade which will enable the student to apply master skills as a sheet metal worker. Course work will include: safety, basic sheet metal principles, trade calculations, piping practices, blueprint reading, refrigeration fundamentals, mechanical systems and heat pumps. Students will be competent in fabrication, triangulation, gutters, downspouts, chimneys, insulation and moisture prevention. The Sheet Metal and Air Conditioning Contractors National Association's (SMACNA) manuals and standards will be supplemental materials used in the classroom. Additionally, students will examine factors involved in estimating labor and materials, equipment and delivery.

**Program Notes:**

Students must earn a grade of C or better for all courses required within the program.

* indicates course has prerequisites and/or corequisites.

Admission Criteria: Formal application and admission to the program is required by the following apprenticeship program:
Certificate & Degree Programs 2019-2020

CONSTRUCTION TRADES - MECHANICAL TRADES: SHEET METAL

CERTIFICATE OF COMPLETION IN CONSTRUCTION TRADES - MECHANICAL TRADES: SHEET METAL (24-48 CREDITS; CODE 5545)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CLC) in Construction Trades - Mechanical Trades: Sheet Metal program is designed to provide knowledge in the sheet metal trade which will enable the student to apply master skills as a sheet metal worker. Course work will include: safety, basic sheet metal principles, trade calculations, piping practices, blueprint reading, refrigeration fundamentals, mechanical systems and heat pumps. Students will be competent in fabrication, triangulation, gutters, downspouts, chimneys, insulation and moisture prevention. The Sheet Metal and Air Conditioning Contractors National Association's (SMACNA) manuals and standards will be supplemental materials used in the classroom. Additionally students will examine factors involved in estimating labor and materials, equipment and delivery.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisites and/or co-requisites.

Program Accreditation/Certification or Licensure Information:
Journeyman status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:
Admission to the program by the following registered apprenticeship program: Interstate Mechanical Corporation (IMCOR)

Program Prerequisites: None

Required Courses ............................................................................................................................................... 24-48

IMC112+ Introduction to Mechanical Trades Construction................................................................................. 6
IMC114+ Overview of Mechanical Trades: Sheet Metal, Pipefitting, Plumbing.................................................. 6
IMC122+ Multiple Trades Cross Training: Tubing, Fittings and Piping Systems.................................................... 6
IMC124+ Multiple Trades Cross Training: Standards ......................................................................................... 6
IMC233+ Mechanical Trades Construction: Sheet Metal Intermediate Principles and Concepts....................... 6
IMC237+ Mechanical Trades Construction: Sheet Metal Advanced Principles and Concepts............................ 6
IMC243+ Mechanical Trades Construction: Sheet Metal Advanced Skill Building.............................................. 6
IMC247+ Mechanical Trades Construction: Sheet Metal Advanced Applications and Techniques....................... 6

Restricted Electives ............................................................................................................................................... 0-12

Any approved general education course from the Social-Behavioral Sciences area........................................... 3-5
Any approved general education course from the Humanities, Arts and Design area......................................... 3
Any approved general education course from the Natural Sciences area............................................................ 4

Any approved general education course from the Social-Behavioral Sciences area........................................... 3-5

Any approved general education course from the Humanities, Arts and Design area......................................... 3

Any approved general education course from the Natural Sciences area............................................................ 4

End of Document
CONSTRUCTION TRADES - MECHANICAL TRADES: SHEET METAL

(Certificate of Completion in Construction Trades - Mechanical Trades: Sheet Metal (24-48 credits; Code 35545))

To qualify, students must earn a grade of C or better in all required courses.

Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades - Mechanical Trades: Sheet Metal program is designed to provide knowledge in the sheet metal trade which will enable the student to apply master skills as a sheet metal worker. Course work will include: safety, basic sheet metal principles, trade calculations, piping practices, blueprint reading, refrigeration fundamentals, mechanical systems and heat pumps. Students will be competent in fabrication, triangulation, gutters, downspouts, chimneys, insulation and moisture prevention. The Sheet Metal and Air Conditioning Contractors National Association's (SMACNA) manuals and standards will be supplemental materials used in the classroom. Additionally, students will examine factors involved in estimating labor and materials, equipment and delivery.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ Indicates course has prerequisites and/or corequisites.

Program Accreditation/Certification or Licensure Information:
Apprenticeship Manager: Anna Lopez
Admission Criteria:
Admission to the program by the following registered apprenticeship program: Interstate Mechanical Corporation (IMCOR)

Program Prerequisites: None

Required Courses ............................................................................................................................................... 24-48

IMC112+ Introduction to Mechanical Trades Construction................................................................................. 6
IMC114+ Overviews of Mechanical Trades: Sheet Metal, Pipefitting, Plumbing........................................ 6
IMC122+ Multiple Trades Cross Training: Tubing, Fittings and Piping Systems.................................................. 6
IMC124+ Multiple Trades Cross Training: Standards......................................................................................... 6
IMC233+ Mechanical Trades Construction: Sheet Metal Intermediate Principles and Concepts......................... 6
IMC237+ Mechanical Trades Construction: Sheet Metal Advanced Principles and Concepts.......................... 6
IMC243+ Mechanical Trades Construction: Sheet Metal Advanced Skill Building.............................................. 6
IMC247+ Mechanical Trades Construction: Sheet Metal Advanced Applications and Techniques.................... 6

Any approved general education course from the Humanities, Arts and Design area........................................ 3
Any approved general education course from the Natural Sciences area.......................................................... 4
degree program may be better equipped to enter supervisory and managerial positions.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any module suffixed courses.

Admission Criteria:
Registered apprentice status in the state of Arizona with a trade-specific sponsoring organization.

Program Prerequisites: None

Required Courses .............................................................................................................................................. 19-37
Certificate of Completion in Construction Trades: Millwrighting (5415) ............................................................. 16-34
BPC/CIS+++++ Any BPC Business Personal Computers or CIS Computer Information System course(s)............3

Restricted Electives ........................................................................................................................................... 0-19
Students must earn zero (0) to nineteen (19) credits from the following list of courses to complete a minimum of 60 credits for the AAS degree based on their apprenticeship standing upon program enrollment and in consultation with Apprenticeship Program Coordinator. Any 100-200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

BLT+++++ Any BLT Building Safety and Construction Technology course(s)
BPC+++++ Any BPC Business Personal Computers course(s)
CAD+++++ Any CAD Computer Aided Drafting course(s)
CNS++++ Any CNS Construction course(s)
GBS+++++ Any GBS General Business course(s)
IND+++++ Any IND Industry course(s)
MGT+++++ Any MGT Management course(s)
MWR+++++ Any MWR Millwright: Apprenticeship course(s)
OSH++++ Any OSH Occupational Safety and Health course(s)
SPA+++++ Any SPA Spanish course(s)
TDR++++ Any TDR Trade related course(s)
WLD+++++ Any WLD Welding Technology course(s)

General Education Requirements ..................................................................................................................... 22-27
ENG101+ First-Year Composition (3) OR ENG107+ First-Year Composition for ESL (3) AND ENG102+ First-Year Composition (3) OR ENG108+ First-Year Composition for ESL (3) OR ENG111+ Technical and Professional Writing (3) .............................................. 6
COM100 Introduction to Human Communication (3) OR COM110 Interpersonal Communication (3) OR COM220 Small Group Communication (3) ....................................................................................................................... 3
CRE101+ College Critical Reading and Critical Thinking (3) OR Equivalent by assessment on District placement exam (0) .................................................... 0-3
MAT120+ Intermediate Algebra (5) OR MAT121+ Intermediate Algebra (4) OR MAT122+ Intermediate Algebra (3) OR Equivalent course or satisfactory completion of a higher level mathematics course ........ 3-5
Any approved general education course from the Humanities, Arts and Design area ...................................... 3

CONSTRUCTION TRADES: MILLWRIGHTING

Certificate of Completion in Construction Trades: Millwrighting (16-34 CREDITS; CODE 5415)

To qualify, students must earn a grade of C or better in all required courses. Department for Construction Trades: Business and Industry Apprentice Manager: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades: Millwrighting program is designed to provide knowledge and skills in the millwrighting trade. Coursework includes courses in millwrighting and welding. Specifically, the courses train apprentices to safely handle both shop and field jobs, to lay out and erect industrial machinery, to operate welding equipment, and to design and install turbines, optics, conveyer systems, solar installation, and operate systems inherent to the millwrighting trade. Upon the completion of this apprenticeship program, students are considered journeymen in the millwrighting trade.

Program Notes:
Students must earn a grade of C or better for each course listed in the program.
+ indicates course has prerequisite and/or corequisites.

Program Accreditation/Certification or Licensure Information: Journeymen status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:
Registered apprentice status in the state of Arizona with a trade-specific sponsoring organization.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 16-34
Students should select from sixteen (16) to thirty-four (34) credits from the following courses based on their apprenticeship standing upon program enrollment and in consultation with Apprenticeship Program Coordinator.

MWR101+ Introduction to Millwrighting I ..................................... 2
MWR102+ Introduction to Millwrighting II: OSHA Safety ......... 2
MWR103+ Machinery Installation and Erection I ...................... 2
MWR104+ Machinery Installation and Erection II .................... 2
MWR105+ Millwrighting General Skills .................................. 2
MWR106+ Math for Millwrighting, Hand, Power and Precision Tools ................................................................. 2
MWR107+ Drives, Pulleys and Belts ........................................ 2
MWR108+ Blueprint Reading for Millwrighting ................. 2
MWR109+ Turbine Familiarization ......................................... 2
MWR201+ Optics and Machining Alignment ..................... 2
MWR202+ Conveyor Systems .................................................. 2
MWR203+ Specialty Machinery I ............................................. 5
MWR204+ Specialty Machinery II .......................................... 5
MWR205+ Machinery Shaft Alignment .................................. 2
MWR206+ Rigging Hardware and Procedures .................. 2
MWR207+ Advanced Precision Alignment Instruments ....... 2
MWR208+ Pumps, Compressors and Flow Seals .................. 2
MWR209+ Introduction to Wind Turbines ......................... 2
MWR210+ Introduction to Solar Installations ..................... 2
WLD100+ Basic Welding ......................................................... 2

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
degree program may be better equipped to enter supervisory and managerial positions.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any module suffixed courses.

Admission Criteria:
Registered apprentice status in the state of Arizona with a trade-specific sponsoring organization.

Program Prerequisites: None

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<th>Credits</th>
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<td>TDR+++++</td>
<td>Any TDR Trade related course(s)</td>
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<tr>
<td>OSH+++++</td>
<td>Any OSH Occupational Safety and Health course(s)</td>
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<tr>
<td>MWR+++++</td>
<td>Any MWR Millwright: Apprenticeship course(s)</td>
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</tr>
<tr>
<td>BLT+++++</td>
<td>Any BLT Building Safety and Construction Technology course(s)</td>
<td></td>
</tr>
<tr>
<td>BPC+++++</td>
<td>Any BPC Business-Personal Computers course(s)</td>
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</tr>
<tr>
<td>CAD+++++</td>
<td>Any CAD Computer Aided Drafting course(s)</td>
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<tr>
<td>CNS+++++</td>
<td>Any CNS Construction course(s)</td>
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<td>GBS+++++</td>
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<td>First-Year Composition for ESL (3)</td>
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<td>MAT121+</td>
<td>Intermediate Algebra (4)</td>
<td>2</td>
</tr>
<tr>
<td>MAT122+</td>
<td>Intermediate Algebra (3)</td>
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<td>General Education Requirements</td>
<td>22-27</td>
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<tr>
<td>MAT121+</td>
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<tr>
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</tr>
<tr>
<td>Equivalent course or satisfactory completion of a higher level mathematics course</td>
<td>3-5</td>
<td></td>
</tr>
</tbody>
</table>

Any approved general education course from the Humanities, Arts and Design area | 3 |

CONSTRUCTION TRADES: MILLWRIGHTING

Certificate of Completion in Construction Trades: Millwrighting (16-34 Credits; Code 5415)

To qualify, students must earn a grade of C or better in all required courses.
Department for Construction Trades: Business and Industry
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Construction Trades: Millwrighting program is designed to provide knowledge and skills in the millwrighting trade. Coursework includes courses in millwrighting and welding. Specifically, the courses train apprentices to safely handle both shop and field jobs, to lay out and erect industrial machinery, to operate welding equipment, and to design and install turbines, optics, conveyor systems, solar installation, and operate systems inherent to the millwrighting trade. Upon the completion of this apprenticeship program, students are considered journeymen in the millwrighting trade.

Program Notes:
Students must earn a grade of C or better for each course listed in the program.
+ indicates course has prerequisite and/or corequisites.

Program Accreditation/Certification or Licensure Information: Journeymen status through the Arizona Department of Commerce, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

Admission Criteria:
Registered apprentice status in the state of Arizona with a trade-specific sponsoring organization.

Program Prerequisites: None

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWR101+</td>
<td>Introduction to Millwrighting I</td>
</tr>
<tr>
<td>MWR102+</td>
<td>Introduction to Millwrighting II: OSHA Safety</td>
</tr>
<tr>
<td>MWR103+</td>
<td>Machinery Installation and Erection I</td>
</tr>
<tr>
<td>MWR104+</td>
<td>Machinery Installation and Erection II</td>
</tr>
<tr>
<td>MWR105+</td>
<td>Millwrighting General Skills</td>
</tr>
<tr>
<td>MWR106+</td>
<td>Math for Millwrighting, Hand, Power and Precision Tools</td>
</tr>
<tr>
<td>MWR107+</td>
<td>Drives, Pulleys and Belts</td>
</tr>
<tr>
<td>MWR108+</td>
<td>Blueprint Reading for Millwrighting</td>
</tr>
<tr>
<td>MWR109+</td>
<td>Turbine Familiarization</td>
</tr>
<tr>
<td>MWR201+</td>
<td>Optics and Machining Alignment</td>
</tr>
<tr>
<td>MWR202+</td>
<td>Conveyor Systems</td>
</tr>
<tr>
<td>MWR203+</td>
<td>Specialty Machinery</td>
</tr>
<tr>
<td>MWR204+</td>
<td>Specialty Machinery II</td>
</tr>
<tr>
<td>MWR205+</td>
<td>Machinery Shaft Alignment</td>
</tr>
<tr>
<td>MWR206+</td>
<td>Rigging Hardware and Procedures</td>
</tr>
<tr>
<td>MWR207+</td>
<td>Advanced Precision Alignment Instruments</td>
</tr>
<tr>
<td>MWR208+</td>
<td>Pumps, Compressors and Flow Seals</td>
</tr>
<tr>
<td>MWR209+</td>
<td>Introduction to Wind Turbines</td>
</tr>
<tr>
<td>MWR210+</td>
<td>Introduction to Solar Installations</td>
</tr>
<tr>
<td>WLD100+</td>
<td>Basic Welding</td>
</tr>
</tbody>
</table>

Any approved general education course from the Social-Behavioral Sciences area | 3 |
Any approved general education course from the Natural Sciences area | 4 |
**CONSTRUCTION TRADES: PAINTING AND DRYWALLING**

**ASSOCIATE IN APPLIED SCIENCE IN CONSTRUCTION TRADES: PAINTING AND DRYWALLING (60 CREDITS; CODE 3444)**

To qualify, students must earn a grade of C or better in all required courses.

**Department for Construction Trades: Business and Industry**

**Apprenticeship Manager: Anna Lopez**

The Associate in Applied Science (AAS) in Construction Trades: Painting and Drywalling degree is designed to provide apprentices and journeymen with a broadened educational background and leadership skills so that students completing the associate degree program may be better equipped to enter supervisory and managerial positions.

**Program Notes:**

Students must earn a grade of C or better in all courses within the program.

+ indicates course has prerequisites and/or corequisites.

**++ indicates any module suffixed courses.**

**Admission Criteria:**

Students are admitted to this program through: Phoenix Painters and Drywall Joint Apprenticeship and Training Committee selection process.

**Program Prerequisites:** None

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRE101</td>
<td>College Critical Reading and Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>COM110</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENG101</td>
<td>First-Year Composition</td>
<td>3</td>
</tr>
<tr>
<td>ENG102</td>
<td>First-Year Composition (ESL)</td>
<td>3</td>
</tr>
<tr>
<td>ENG107</td>
<td>First-Year Composition (3)</td>
<td>3</td>
</tr>
<tr>
<td>ENG108</td>
<td>Technical and Professional Writing</td>
<td>3</td>
</tr>
<tr>
<td>WLD101</td>
<td>Welding I</td>
<td>3</td>
</tr>
<tr>
<td>WLD201</td>
<td>Welding II</td>
<td>3</td>
</tr>
<tr>
<td>TDR/WLD202</td>
<td>Construction Welding III</td>
<td>3</td>
</tr>
<tr>
<td>WLD214</td>
<td>American Welding Society Certification Preparation</td>
<td>2</td>
</tr>
<tr>
<td>WLD215A+</td>
<td>Weld Fabrication I for Millwrighting</td>
<td>2</td>
</tr>
<tr>
<td>WLD215AB+</td>
<td>Weld Fabrication II for Millwrighting</td>
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</tr>
<tr>
<td>WLD+++++</td>
<td>Any WLD Welding Technology course(s)</td>
<td>19-33.5</td>
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<tr>
<td>TDR+++++</td>
<td>Any TDR Trade Related course(s)</td>
<td>16-30.5</td>
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<tr>
<td>PNT+++++</td>
<td>Any PNT Painting and Drywalling course(s)</td>
<td>138</td>
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<td>GBS+++++</td>
<td>Any GBS General Business course(s)</td>
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</tr>
<tr>
<td>CNS+++++</td>
<td>Any CNS Construction course(s)</td>
<td>16</td>
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<tr>
<td>BLT+++++</td>
<td>Any BLT Building Safety and Construction Technology course(s)</td>
<td>138</td>
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<tr>
<td>BPC+++++</td>
<td>Any BPC Business-Personal Computers or CIS Computer Information Systems course(s)</td>
<td>139</td>
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<tr>
<td>CAD+++++</td>
<td>Any CAD Computer Aided Drafting course(s)</td>
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<tr>
<td>CNS+++++</td>
<td>Any CNS Construction course(s)</td>
<td>3</td>
</tr>
<tr>
<td>GBS+++++</td>
<td>Any GBS General Business course(s)</td>
<td>3</td>
</tr>
<tr>
<td>PNT+++++</td>
<td>Any PNT Painting and Drywalling course(s)</td>
<td>3</td>
</tr>
<tr>
<td>IND+++++</td>
<td>Any IND Industry course(s)</td>
<td>3</td>
</tr>
<tr>
<td>MGT+++++</td>
<td>Any MGT Management course(s)</td>
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</tr>
<tr>
<td>OSH+++++</td>
<td>Any OSH Occupational Safety and Health course(s)</td>
<td>3</td>
</tr>
<tr>
<td>SPA+++++</td>
<td>Any SPA Spanish course(s)</td>
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<tr>
<td>TDR+++++</td>
<td>Any TDR Trade Related course(s)</td>
<td>3</td>
</tr>
<tr>
<td>WLD+++++</td>
<td>Any WLD Welding Technology course(s)</td>
<td>3</td>
</tr>
</tbody>
</table>

60 credits for the AAS degree based on their apprenticeship standing upon program enrollment and in consultation with Apprenticeship Program Coordinator. Any 100-200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

**Restricted Electives**

Students should choose six (6) to nineteen (19) credits from the following list of courses to complete a minimum of 60 credits for the AAS degree based on their apprenticeship standing upon program enrollment and in consultation with Apprenticeship Program Coordinator. Any 100-200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG111</td>
<td>Technical and Professional Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG102</td>
<td>First-Year Composition (ESL)</td>
<td>3</td>
</tr>
<tr>
<td>ENG107</td>
<td>First-Year Composition (3)</td>
<td>3</td>
</tr>
<tr>
<td>ENG108</td>
<td>Technical and Professional Writing</td>
<td>3</td>
</tr>
<tr>
<td>MAT120</td>
<td>Intermediate Algebra (5)</td>
<td>3</td>
</tr>
<tr>
<td>MAT121</td>
<td>Intermediate Algebra (4)</td>
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</tr>
<tr>
<td>MAT122</td>
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<td>CRE101</td>
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<tr>
<td>MAT202</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>ENG101</td>
<td>First-Year Composition</td>
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<td>WLD215AB+</td>
<td>Weld Fabrication II for Millwrighting</td>
<td>2</td>
</tr>
</tbody>
</table>

Any approved general education course from the Humanities, Arts and Design area | 3 |

Any approved general education course from the Social-Behavioral Sciences area | 3 |

Any approved general education course from the Natural Sciences area | 4 |

**CONSTRUCTION TRADES: PAINTING AND DRYWALLING**

**CERTIFICATE OF COMPLETION IN CONSTRUCTION TRADES: PAINTING AND DRYWALLING (16-30.5 CREDITS; CODE 5407)**

To qualify, students must earn a grade of C or better in all required courses.

**Department for Construction Trades: Business and Industry**

**Apprenticeship Manager: Anna Lopez**

The Certificate of Completion (CCL) in Construction Trades: Painting and Drywalling program is designed to provide apprentices in the painting and drywalling trade with the knowledge and skills needed to paint from ladders and scaffolds, prepare and paint various types of surfaces, and handle all types of painting equipment. Upon completion of this program, apprentices are considered to be journeymen in the painting and drywalling trade.

**Program Notes:**

Students must earn a grade of C or better for all courses required within the program.

**Program Accreditation/Certification or Licensure Information:**

Journeyman status through the Arizona Commerce Authority, Apprenticeship Services Division, U.S. Department of Labor, Bureau of Apprenticeship and Training.

**Admission Criteria:**

Admission to the program by the following registered apprenticeship program: Phoenix Painters and Drywall Joint Apprenticeship and Training Committee.

**Program Prerequisites:** None

**Required Courses**

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
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<tr>
<td>ENG107</td>
<td>First-Year Composition for ESL</td>
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<tr>
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<td>COM100</td>
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<td>COM110</td>
<td>Interpersonal Communication</td>
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<tr>
<td>COM230</td>
<td>Small Group Communication</td>
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<td>CRE101</td>
<td>College Critical Reading and Critical Thinking</td>
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<td>WLD214</td>
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<td>WLD215A+</td>
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<td>Weld Fabrication II for Millwrighting</td>
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</table>

60 credits for the AAS degree based on their apprenticeship standing upon program enrollment and in consultation with Apprenticeship Program Coordinator. Any 100-200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

**Restricted Electives**

Students should choose six (6) to nineteen (19) credits from the following list of courses to complete a minimum of 60 credits for the AAS degree based on their apprenticeship standing upon program enrollment and in consultation with Apprenticeship Program Coordinator. Any 100-200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

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<td>First-Year Composition</td>
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</tr>
</tbody>
</table>

Any approved general education course from the Humanities, Arts and Design area | 3 |

Any approved general education course from the Social-Behavioral Sciences area | 3 |

Any approved general education course from the Natural Sciences area | 4 |
## Certificate & Degree Programs 2019-2020

### ASSOCIATE IN APPLIED SCIENCE IN CONSTRUCTION TRADES: PAINTING AND DRYWALLING (34 CREDITS; CODE 3444)

To qualify, students must earn a grade of C or better in all required courses.

**Department for Construction Trades: Business and Industry**

**Apprenticeship Manager:** Anna Lopez

The Associate in Applied Science (AAS) in Construction Trades: Painting and Drywalling degree is designed to provide apprentices and journeymen with a broadened educational background and leadership skills so that students completing the associate degree program may be better equipped to enter supervisory and managerial positions.

**Program Notes:**

- Students must earn a grade of C or better in all courses within the program.
- + indicates course has prerequisites and/or corequisites.
- ++ indicates any module suffixed courses.

### Admission Criteria:

Students are admitted to this program through: Phoenix Painters and Drywall Joint Apprenticeship and Training Committee selection process.

### Program Prerequisites:

None

### Required Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLD101</td>
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<td>WLD201+</td>
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<tr>
<td>TDR/WLD202+</td>
<td>Construction Welding III</td>
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</tr>
<tr>
<td>WLD214+</td>
<td>American Welding Society Certification Preparation</td>
<td>2</td>
</tr>
<tr>
<td>WLD215AA+</td>
<td>Weld Fabrication I for Millwrighting</td>
<td>2</td>
</tr>
<tr>
<td>WLD215AB+</td>
<td>Weld Fabrication II for Millwrighting</td>
<td>2</td>
</tr>
</tbody>
</table>

### Program Notes:

- Any approved general education course from the Humanities, Arts and Design area.
- Any approved general education course from the Social-Behavioral Sciences area.
- Any approved general education course from the Natural Sciences area.
- Any approved general education course from the Social-Behavioral Sciences area.
- Any approved general education course from the Natural Sciences area.

### General Education Requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG101+</td>
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<tr>
<td>ENG107+</td>
<td>First-Year Composition for ESL (3) AND</td>
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<tr>
<td>ENG102+</td>
<td>First-Year Composition (3)</td>
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<tr>
<td>ENG108B+</td>
<td>First-Year Composition for ESL (3) OR</td>
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<tr>
<td>ENG111+</td>
<td>Technical and Professional Writing (3)</td>
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</tr>
<tr>
<td>COM100</td>
<td>Introduction to Human Communication (3) OR</td>
<td></td>
</tr>
<tr>
<td>COM110</td>
<td>Interpersonal Communication (3) OR</td>
<td></td>
</tr>
<tr>
<td>COM230</td>
<td>Small Group Communication (3) OR</td>
<td></td>
</tr>
<tr>
<td>CRE101+</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
<td></td>
</tr>
<tr>
<td>MAT110+</td>
<td>Intermediate Algebra (5) OR</td>
<td></td>
</tr>
<tr>
<td>MAT112+</td>
<td>Intermediate Algebra (4) OR</td>
<td></td>
</tr>
<tr>
<td>MAT113+</td>
<td>Intermediate Algebra (3) OR</td>
<td></td>
</tr>
</tbody>
</table>

### Program Prerequisites for Math Requirement:

- Any approved general education course from the Natural Sciences area.
- Any approved general education course from the Social-Behavioral Sciences area.
- Any approved general education course from the Humanities, Arts and Design area.

### Restricted Electives:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLT++++</td>
<td>Any BLT Building Safety and Construction Technology course(s)</td>
<td></td>
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<td>BPC++++</td>
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<tr>
<td>CAD++++</td>
<td>Any CAD Computer Aided Drafting course(s)</td>
<td></td>
</tr>
<tr>
<td>CNS++++</td>
<td>Any CNS Construction course(s)</td>
<td></td>
</tr>
<tr>
<td>GBS++++</td>
<td>Any GBS General Business course(s)</td>
<td></td>
</tr>
<tr>
<td>PNT++++</td>
<td>Any PNT Painting and Drywalling course(s)</td>
<td></td>
</tr>
<tr>
<td>IND++++</td>
<td>Any IND Industry course(s)</td>
<td></td>
</tr>
<tr>
<td>MGT++++</td>
<td>Any MGT Management course(s)</td>
<td></td>
</tr>
<tr>
<td>OSH++++</td>
<td>Any OSH Occupational Safety and Health course(s)</td>
<td></td>
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<tr>
<td>SPA++++</td>
<td>Any SPA Spanish course(s)</td>
<td></td>
</tr>
<tr>
<td>TDR++++</td>
<td>Any TDR Trade Related course(s)</td>
<td></td>
</tr>
<tr>
<td>WLD++++</td>
<td>Any WLD Welding Technology course(s)</td>
<td></td>
</tr>
</tbody>
</table>

### Certificate & Degree Programs 2019-2020

**CONSTRUCTION TRADES: PAINTING AND DRYWALLING**

**ASSOCIATE IN APPLIED SCIENCE IN CONSTRUCTION TRADES: PAINTING AND DRYWALLING**

16-30.5 CREDITS; CODE 5407

To qualify, students must earn a grade of C or better in all required courses.

**Department for Construction Trades: Business and Industry**

**Apprenticeship Manager:** Anna Lopez

The Certificate of Completion (CCL) in Construction Trades: Painting and Drywalling program is designed to provide knowledge and skills in the painting and drywalling trade. Apprentices in this program receive training in the skills needed to paint from ladders and scaffolds, prepare and paint various types of surfaces, and handle all types of painting equipment. Upon completion of this program, apprentices are considered to be journeymen in the painting and drywalling trade.

**Program Notes:**

- Students must earn a grade of C or better for all courses required within the program.
- Program Accreditation/Certification or Licensure Information: Phoenix Painters and Drywall Joint Apprenticeship and Training Committee.

### Program Prerequisites:

None

### Required Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLT+</td>
<td>Any BLT Building Safety and Construction Technology course(s)</td>
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<td>BPC+</td>
<td>Any BPC Business-Personal Computers course(s)</td>
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<td>CAD+</td>
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<td>CNS+</td>
<td>Any CNS Construction course(s)</td>
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</tr>
<tr>
<td>GBS+</td>
<td>Any GBS General Business course(s)</td>
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<td>Any PNT Painting and Drywalling course(s)</td>
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</tr>
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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG101+</td>
<td>First-Year Composition (3) OR</td>
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</tr>
<tr>
<td>ENG107+</td>
<td>First-Year Composition for ESL (3) AND</td>
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</tr>
<tr>
<td>ENG102+</td>
<td>First-Year Composition (3) OR</td>
<td></td>
</tr>
<tr>
<td>ENG108B+</td>
<td>First-Year Composition for ESL (3) OR</td>
<td></td>
</tr>
<tr>
<td>ENG111+</td>
<td>Technical and Professional Writing (3)</td>
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</tr>
<tr>
<td>COM100</td>
<td>Introduction to Human Communication (3) OR</td>
<td></td>
</tr>
<tr>
<td>COM110</td>
<td>Interpersonal Communication (3) OR</td>
<td></td>
</tr>
<tr>
<td>COM230</td>
<td>Small Group Communication (3) OR</td>
<td></td>
</tr>
<tr>
<td>CRE101+</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
<td></td>
</tr>
<tr>
<td>MAT110+</td>
<td>Intermediate Algebra (5) OR</td>
<td></td>
</tr>
<tr>
<td>MAT112+</td>
<td>Intermediate Algebra (4) OR</td>
<td></td>
</tr>
<tr>
<td>MAT113+</td>
<td>Intermediate Algebra (3) OR</td>
<td></td>
</tr>
</tbody>
</table>

### Program Notes:

- Students should select from Core area and from Track 1 or Track 2 to complete sixteen (16) to thirty and a half (30.5) credits.

**Certificate & Degree Programs 2019-2020**

### General Education Requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG101+</td>
<td>First-Year Composition (3)</td>
<td></td>
</tr>
<tr>
<td>ENG107+</td>
<td>First-Year Composition for ESL (3) AND</td>
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<td>ENG102+</td>
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<tr>
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</tr>
<tr>
<td>MAT113+</td>
<td>Intermediate Algebra (3) OR</td>
<td></td>
</tr>
</tbody>
</table>

Any approved general education course from the Humanities, Arts and Design area.

Any approved general education course from the Social-Behavioral Sciences area.

Any approved general education course from the Natural Sciences area.

Any approved general education course from the Social-Behavioral Sciences area.

Any approved general education course from the Natural Sciences area.

### Admission Criteria:

Admission to the program by the following registered apprenticeship program: Phoenix Painters and Drywall Joint Apprenticeship and Training Committee.
CONSTRUCTION TRADES: PRE-APPRENTICESHIP

The Certificate of Completion (CCL) in Construction Trades: Pre-Apprenticeship program is designed to train and upgrade skills of people interested in entering construction trades registered apprenticeship programs. Training is included in the areas of OSHA-10 certification and introductory courses in the areas of hand and power tools, math, blueprint reading, rigging, materials handling and green construction overview. Soft skills training includes problem solving, communication, and computer basics. The skills acquired in this program can be applied toward advanced placement in a participating registered apprenticeship program which may require a background check and/or drug testing.

Program Notes:
Students must earn a grade of C or better in all courses within the program

This program is not eligible for Title IV Federal Financial Aid. Upon completion of this program, application for registered apprenticeship status may require a background check and/or drug testing.

Program Prerequisites: None
Admission Criteria:
Currently enrolled in junior/senior year in high school or high school diploma or GED.

All Students Must Select:

- ABC/MEC/PNT121+ Introduction to Hand and Power Tools 3.5
- CNS290AB+ Construction Internship 1
- CNS510+ Green Construction Overview 0.5
- CNS511+ Foundations for Apprenticeship 1
- ABA106+ Introduction to Materials Handling 0.5
- BPC100 Business Personal Computers 2
- BPC110 StrategieS for College Success 3

Total Program Hours: 372

Electrical Installer Certificate of Competency in Electrical Installer (372 CLOCK HOURS; CODE 1644N–DAY/1667N–NIGHT)

Program Manager: R. Mark Woehl

The Certificate of Competency (CCT) for Electrical Installer introduces the fundamentals of electrical theory, residential wiring, and a basic understanding of electrical requirements of the National Electric Code (NEC).

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISP116</td>
<td>Computer Foundations</td>
<td>24</td>
</tr>
<tr>
<td>CCR209</td>
<td>Core: Intro to Craft Skills</td>
<td>8</td>
</tr>
<tr>
<td>ELR110</td>
<td>Electrical Basics</td>
<td>157</td>
</tr>
<tr>
<td>ELR111</td>
<td>Electrical Installations</td>
<td>111</td>
</tr>
<tr>
<td>Total Program Hours</td>
<td></td>
<td>372</td>
</tr>
</tbody>
</table>

Electrical Technician Certificate of Competency in Electrical Technician Program (610 CLOCK HOURS; CODE 1663–DAY/1665–NIGHT)

Program Notes:

- Indicates course has prerequisites and/or co-requisites.
- Indicates any module suffixed courses.
Certificate & Degree Programs 2019-2020

Certificate & Degree Programs 2019-2020
+ Indicates course has prerequisites ... suffixed courses.
++ Indicates any module suffixed courses.

and computer basics. The skills acquired in this program can be applied toward advanced placement in a participating
areas of OSHA-10 certification and introductory courses in the areas of hand and power tools, math, blueprint reading,
The Certificate of Completion (CCL) in Construction Trades: Pre-Apprenticeship program is designed to train and upgrade
Apprenticeship Manager: Anna Lopez
(12 CREDITS; CODE 5746N)
CERTIFICATE OF COMPLETION IN CONSTRUCTION TRADES: PRE-APPRENTICESHIP
CONSTRUCTION
Upon completion of this program, application for registered apprenticeship status may require a background check and/or drug testing.
Admission Criteria:
Currently enrolled in junior/senior year in high school or college diploma or GED.
Program Prerequisites: None
Required Courses ..................................................................................................... 12
All Students Must Select: .......................................................................................... 8.5
ABC/PNT118+ OSHA Standards and Regulations .................................................. 1.5
ABC/MEC/PNT120+ Basic Calculations for Construction ........................................ 1.5
ABC/MEC/PNT123 + Introduction to Hand and Power Tools ................................ 1
ABC/HEO/MEC122+ Rigging Safety and Equipment ................................................ 1
ABC123+ Introduction to Construction Drawings ................................................. 0.5
CNS290AB+ Construction Internship ................................................................. 2
TDR102+ Construction Soft Skills I: Workplace Skills ........................................ 1
High School Juniors/Seniors Must Select: .................................................................. 3.5
AAA/CPD150 Strategies for College Success ......................................................... 3
ABAI06+ Introduction to Materials Handling ....................................................... 0.5
Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
Standards aligned to industry credentials through The National Center for Construction Education and Research (NCCER).

Certification of Competency (CCT) for Electrical Installer introduces the fundamentals of electrical theory, residential wiring, and a basic understanding of electrical requirements of the National Electric Code (NEC).

Admission Criteria:
Currently enrolled in junior/senior year in high school or college diploma or GED.
Program Prerequisites: None
Required Courses ..................................................................................................... 11
All Students Must Select: .......................................................................................... 11
ABC/PNT118+ OSHA Standards and Regulations .................................................. 1.5
ABC/MEC/PNT120+ Basic Calculations for Construction ........................................ 1.5
ABC/MEC/PNT123 + Introduction to Hand and Power Tools ................................ 1
ABC/HEO/MEC122+ Rigging Safety and Equipment ................................................ 1
ABC123+ Introduction to Construction Drawings ................................................. 0.5
CNS290AB+ Construction Internship ................................................................. 2
TDR102+ Construction Soft Skills I: Workplace Skills ........................................ 1
High School Juniors/Seniors Must Select: .................................................................. 3.5
AAA/CPD150 Strategies for College Success ......................................................... 3
ABAI06+ Introduction to Materials Handling ....................................................... 0.5
Post High School Students Must Select: ................................................................ 2
BPC100 Business Personal Computers ................................................................ 2
CNS102 Foundations for Apprenticeship ............................................................. 1
CNS110+ Green Construction Overview ............................................................ 0.5

Electrical Installer
CERTIFICATE OF COMPETENCY IN ELECTRICAL INSTALLER
(372 CLOCK HOURS; CODE 1644N–DAY/1667N–NIGHT)
Division: Trades & Technology – Construction Trades
Program Manager: R. Mark Woelh

The Certificate of Competency (CCT) for Electrical Installer introduces the fundamentals of electrical theory, residential wiring, and a basic understanding of electrical requirements of the National Electric Code (NEC).

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
Standards aligned to industry credentials through The National Center for Construction Education and Research (NCCER).

Certification of Competency (CCT) in Electrical Technician.

Electrical Technician
CERTIFICATE OF COMPETENCY IN ELECTRICAL TECHNICIAN PROGRAM
(610 CLOCK HOURS; CODE 1663–DAY/1665–NIGHT)
Division: Trades & Technology – Construction Trades
Certificate & Degree Programs 2019-2020

Program Manager: R. Mark Woehl

The Certificate of Competency (CCT) for Electrical Technician explores the fundamentals of electrical theory, residential wiring, along with a basic understanding of electrical requirements of the National Electric Code (NEC) for designing electrical layouts, installation methods and maintenance, troubleshooting, and repair of electrical circuits and equipment.

Program Note:
Standards aligned to industry credentials through The National Center for Construction Education and Research (NCCEER).

Required Courses                                                                 Clock Hours
ISP116 Computer Foundations .................................................................................. 24
COT101 Core: Intro to Craft Skills .......................................................................... 80
ELR110 Electrical Basics ....................................................................................... 157
ELR111 Electrical Installations ............................................................................... 111
ELR210 Electrical Level 2 ....................................................................................... 119
ELR211 Electrical Applications Level 2 ................................................................ 119
Total Program Hours: ......................................................................................... 610

ELECTRICAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE IN ELECTRICAL TECHNOLOGY
(61-66 CREDITS; CODE 3767)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Apprenticeship Manager: Anna Lopez

This Associate in Applied Science (AAS) in Electrical Technology is designed to provide students with a broadened educational background and leadership skills in electrical technology. This expertise will allow employment within the industry in the areas of management, sales, field service, business ownership or instruction. Students are admitted to the AAS in Electrical Technology only through the Electric League of Arizona.

Program note:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or co-requisites.

Admission Criteria:
Formal application and admission to the program by the Electric League of Arizona and a high school diploma, GED, or 6 months electrical industry or related experience.

Required Courses                                                                 Clock Hours
ELC119 Concepts of Electricity and Electronics ..................................................... 3
ELC123 Residential Electrical Wiring and Codes ..................................................... 3
ELC160+ Applied Electrical Codes I ........................................................................ 3
ELC164 Grounding and Bonding ........................................................................... 3
Total Program Hours: ......................................................................................... 39

ELECTRICAL TECHNOLOGY - COMMERCIAL WIRING
CERTIFICATE OF COMPLETION IN ELECTRICAL TECHNOLOGY - COMMERCIAL WIRING
(12 CREDITS; CODE 5904N)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Electrical Technology - Commercial Wiring is specifically designed to build upon knowledge and skills in residential electrical applications and provide greater depth in skills and commercial electrical applications. The Certificate of Completion (CCL) lays the framework for the International Code Council (ICC) and International Association of Electrical Inspectors (IAEI) certification exams. Students are admitted to the Certificate of Completion in Electrical Technology - Commercial Wiring program only through the Electric League of Arizona.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or co-requisites.

Admission Criteria:
Formal application and admission to the program by the Electric League of Arizona and a high school diploma, GED, or 6 months electrical industry or related experience.

Required Courses                                                                 Clock Hours
ELC120+ Industrial Electrical Wiring and Codes ......................................................... 3
ELC160+ Applied Electrical Codes II ...................................................................... 3
ELC217+ Motor Controls ......................................................................................... 3
Total Program Hours: ......................................................................................... 111

Certificate & Degree Programs 2019-2020

Industrial Wiring - 12
ELC124+ Industrial Electrical Wiring and Codes ......................................................... 3
ELC144+ Basic Automated Systems Using Programmable Controllers ................... 3
ELC210+ AC Machinery and DC Machinery ............................................................ 3
ELC218+ Variable Frequency Drives ...................................................................... 3

General Education Requirement ........................................................................ 22-27

ENG101+ First-Year Composition (3) OR Equivalent as indicated by assessment (0) .............................................................. 0-3
ENG102+ First-Year Composition (3) OR Equivalent course or satisfactory completion of a higher level mathematics course ........ 3-5
MAT120+ Intermediate Algebra (5) OR Equivalent course or satisfactory completion of a higher level mathematics course ........ 3-5
MAT121+ Intermediate Algebra (4) OR Equivalent course or satisfactory completion of a higher level mathematics course ........ 3-5
MAT122+ Intermediate Algebra (3) OR Equivalent course or satisfactory completion of a higher level mathematics course ........ 3-5
CHM130+ Fundamental Chemistry (3) AND Any approved general education course from the Humanities, Arts and Design area........... 3
CHM130LL+ Fundamental Chemistry Laboratory (1) .............................................. 4

Certificate & Degree Programs 2019-2020

Program Notes:
4
Certificate & Degree Programs 2019-2020

Program Manager: R. Mark Woehl

The Certificate of Competency (CTC) for Electrical Technician explores the fundamentals of electrical theory, residential wiring, along with a basic understanding of electrical requirements of the National Electric Code (NEC) for designing electrical layouts, installation methods and maintenance, troubleshooting, and repair of electrical circuits and equipment.

Program Notes:
Standards aligned to industry credentials through The National Center for Construction Education and Research (NCCER).

Required Courses  .................................................................................................................................................... 39
ISP116  Computer Foundations .......................................................................................................................... 24
COR101  Core: Intro to Craft Skills .................................................................................................................... 80
ERL110  Electrical Basics .................................................................................................................................. 157
ERL111  Electrical Installations .......................................................................................................................... 111
ERL210  Electrical Level 2 .................................................................................................................................... 119
ERL211  Electrical Applications Level 2 ................................................................................................................. 610

Total Program Hours: ............................................................................................................................................ 610

ELECTRICAL TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE IN ELECTRICAL TECHNOLOGY
(61-66 CREDITS; CODE 3767)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Industrial Technology
Apprenticeship Manager: Anna Lopez

This Associate in Applied Science (AAS) in Electrical Technology is designed to provide students with a broadened educational background and leadership skills in electrical technology. This expertise will allow employment within the industry in the areas of management, sales, field service, business ownership or instruction. Students are admitted to the AAS in Electrical Technology only through the Electric League of Arizona.

Program Note:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or co-requisites.

Admission Criteria:
Formal application and admission to the program by the Electric League of Arizona and a high school diploma, GED, or 6 months electrical industry or related experience.

Program Prerequisites: None

Required Courses  .................................................................................................................................................... 39

Residential Wiring - 15
ELC103  Electrical/Mechanical Calculations .................................................................................. 3
ELC119  Concepts of Electricity and Electronics ................................................................................. 3
ELC223  Residential Electrical Wiring and Codes ..................................................................................... 3
ELC160+  Applied Electrical Codes I .................................................................................................................. 3
ELC164  Grounding and Bonding .......................................................................................................................... 3

Commercial Wiring - 12
ELC120  Solid State Fundamentals .................................................................................................................... 3
ELC125+  Commercial Electrical Wiring and Codes .............................................................................................. 3
ELC161+  Applied Electrical Codes II .................................................................................................................. 3
ELC217+  Motor Controls .................................................................................................................................... 3

Equivalent course or satisfactory completion of a higher level mathematics course ........... 3-5

Any approved general education course from the Humanities, Arts and Design area................................. 3
Any approved general education course from the Social-Behavioral Sciences area.............................. 3
CHM130+  Fundamental Chemistry (3) AND CHM310LL+  Fundamental Chemistry Laboratory (1) .................................................................................................................................................. 3-4

General Education Requirement ..................................................................................................................................... 22-27
CRE101+  College Critical Reading and Critical Thinking (3) OR Equivalent as indicated by assessment (0) .................................................................................................................................................. 0-3
CBA120+  Introduction to Business Administration (3) OR Equivalent as indicated by assessment (0) .................................................................................................................................................. 0-3
MAT120+  Intermediate Algebra (5) OR Equivalent as indicated by assessment (0) .................................................................................................................................................. 3-5
MAT121+  Intermediate Algebra (4) OR Equivalent as indicated by assessment (0) .................................................................................................................................................. 3-5
MAT122+  Intermediate Algebra (3) OR Equivalent as indicated by assessment (0) .................................................................................................................................................. 3-5
MAT220+  Precalculus (4) OR Equivalent as indicated by assessment (0) .................................................................................................................................................. 3-5
MAT221+  Calculus I (5) OR Equivalent as indicated by assessment (0) .................................................................................................................................................. 3-5
ENG108+  First-Year Composition for ESL (3) ............................................................................................. 3
ENG107+  First-Year Composition (3) OR ENG111+  Technical and Professional Writing (3) .......... 3
ENG101+  First-Year Composition (3) OR ENG101O  First-Year Composition (O) .................................................................................................................................................. 3
MAT130+  Calculus I (4) OR MAT130O  Calculus I (O) .......................................................................................... 3
ENG207+  Technical Writing or ENG211+  Technical Writing (3) ........................................................................ 3
CHM130+  Fundamental Chemistry (3) AND CHM310LL+  Fundamental Chemistry Laboratory (1) .................................................................................................................................................. 3-4

ELECTRICAL TECHNOLOGY - COMMERCIAL WIRING
CERTIFICATE OF COMPLETION IN ELECTRICAL TECHNOLOGY - COMMERCIAL WIRING
(12 CREDITS; CODE 5904N)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Industrial Technology
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCl) in Electrical Technology - Commercial Wiring is specifically designed to build upon knowledge and skills in residential electrical applications and provide greater depth in skills and commercial electrical applications. The Certificate of Completion (CCl) lays the framework for the International Code Council (ICC) and International Association of Electrical Inspectors (IAEI) certification exams. Students are admitted to the Certificate of Completion in Electrical Technology - Commercial Wiring program only through the Electric League of Arizona.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or co-requisites.

Admission Criteria:
Formal application and admission to the program by the Electric League of Arizona and a high school diploma, GED, or 6 months electrical industry or related experience.
Program Prerequisites: None

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ELC120 Solid State Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ELC125+ Commercial Electrical Wiring and Codes</td>
<td>3</td>
</tr>
<tr>
<td>ELC163+ Electrical Codes and Inspection II</td>
<td>3</td>
</tr>
<tr>
<td>ELC217+ Motor Controls</td>
<td>3</td>
</tr>
</tbody>
</table>

**ELECTRICAL TECHNOLOGY - INDUSTRIAL WIRING**

**CERTIFICATE OF COMPLETION IN ELECTRICAL TECHNOLOGY - INDUSTRIAL WIRING**

(12 CREDITS; CODE 5906N)

To qualify, students must earn a grade of C or better in all courses within the program.

**Division: Industrial Technology**

**Apprenticeship Manager: Anna Lopez**

The Certificate of Completion (CCL) in Electrical Technology - Industrial Wiring is specifically designed to develop knowledge and technical expertise will be learned on industry specific three-dimensional (3D) Solid Design software, Computer Aided Engineering, product development and rapid part production. Competency in hi-tech product development and manufacturing companies. The program includes courses designed to provide students with a working knowledge in the field of product design, product development and rapid part production. Competency and technical expertise will be earned on industry specific three-dimensional (3D) Solid Design software, Computer Aided Manufacturing (CAM) software, and 3D printers. The core specialty of the program is hands-on experience with Computer Aided Design (CAD), CAM, and 3D printing.

**Program Prerequisites:** None

**Admission Criteria:**

- Formal application and admission to the program by the Electric League of Arizona and a high school diploma, GED, or 6 months electrical industry or related experience.
- Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher, or permission of Department or Division.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ELC103 Electrical/Mechanical Calculations</td>
<td>3</td>
</tr>
<tr>
<td>ELC119+ Basic Automated Systems Using Programmable Controllers</td>
<td>3</td>
</tr>
<tr>
<td>ELC124+ Industrial Electrical Wiring and Codes</td>
<td>3</td>
</tr>
<tr>
<td>ELC218+ Variable Frequency Drives</td>
<td>3</td>
</tr>
<tr>
<td>ELC219+ Motor Controls</td>
<td>3</td>
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</table>

**ELECTRICAL TECHNOLOGY - RESIDENTIAL WIRING**

**CERTIFICATE OF COMPLETION IN ELECTRICAL TECHNOLOGY - RESIDENTIAL WIRING**

(15 CREDITS; CODE 5756N)

To qualify, students must earn a grade of C or better in all courses within the program.

**Division: Industrial Technology**

**Apprenticeship Manager: Anna Lopez**

The Certificate of Completion (CCL) in Electrical Technology - Residential Wiring is specifically designed to provide a foundation of fundamental electrical knowledge and skills in residential electrical applications. These include use of tools, applied calculations, theories and concepts of electricity and electronics, residential wiring and codes. The Certificate of Completion lays the framework for the International Code Council (ICC) and International Association of Electrical Inspectors (IAEI) certification exams. Students are admitted to the Certificate of Completion in Electrical Technology - Residential Wiring program only through the Electric League of Arizona.

**Program Notes:**

- Students must earn a grade of C or better in all courses within the program.
- This program is not eligible for Title IV Federal Financial Aid.

**Admission Criteria:**

- Formal application and admission to the program by the Electric League of Arizona and a high school diploma, GED, or 6 months electrical industry or related experience.
- Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher, or permission of Department or Division.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>METT09 Machine Trades Print Reading</td>
<td>3</td>
</tr>
<tr>
<td>Satisfactory completion of departmental credit by examination</td>
<td>3</td>
</tr>
</tbody>
</table>

**INDUSTRIAL DESIGN TECHNOLOGY**

**ASSOCIATE IN APPLIED SCIENCE DEGREE IN INDUSTRIAL DESIGN TECHNOLOGY**

(61-70 CREDITS; CODE 3116)

To qualify, students must earn a grade of C or better in all courses within the program.

**Division: Industrial Technology**

**Program Director: David Zamora**

The Associate in Applied Science (AAS) in Industrial Design Technology program prepares students for careers as technical assistants, engineering technicians or hands-on product manufacturers. This expertise will allow employment in a variety of hi-tech product development and manufacturing companies. The program includes courses designed to provide students with a working knowledge in the field of product design, product development and rapid part production. Competency and technical expertise will be earned on industry specific three-dimensional (3D) Solid Design software, Computer Aided Manufacturing (CAM) software, and 3D printers. The core specialty of the program is hands-on experience with Computer Aided Design (CAD), CAM, and 3D printing.

**Program Notes:**

- Students must earn a grade of C or better in all courses within the program.
- This program is not eligible for Title IV Federal Financial Aid.

**Admission Criteria:**

- Formal application and admission to the program by the Electric League of Arizona and a high school diploma, GED, or 6 months electrical industry or related experience.
- Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher, or permission of Department or Division.

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</tr>
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<td>Satisfactory completion of departmental credit by examination</td>
<td>3</td>
</tr>
<tr>
<td>Program Prerequisites: None</td>
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</tr>
<tr>
<td>-----------------------------</td>
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<tr>
<td><strong>Required Courses</strong></td>
<td>12</td>
</tr>
<tr>
<td>ELC120</td>
<td>Solid State Fundamentals</td>
</tr>
<tr>
<td>ELC125+</td>
<td>Commercial Electrical Wiring and Codes</td>
</tr>
<tr>
<td>ELC163+</td>
<td>Electrical Codes and Inspection II</td>
</tr>
<tr>
<td>ELC217+</td>
<td>Motor Controls</td>
</tr>
</tbody>
</table>

**ELECTRICAL TECHNOLOGY - INDUSTRIAL WIRING**

**CERTIFICATE OF COMPLETION IN ELECTRICAL TECHNOLOGY - INDUSTRIAL WIRING**

(12 CREDITS; CODE 5906N)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Industrial Technology
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Electrical Technology - Industrial Wiring is specifically designed to develop knowledge of advanced electrical skills typical of industrial applications. The Certificate of Completion (CCL) lays the framework for the International Code Council (ICC) and International Association of Electrical Inspectors (IAEI) certification exams. Students are admitted to the Certificate of Completion in Electrical Technology - Industrial Wiring program only through the Electric League of Arizona.

**Program Notes:**
Students must earn a grade of C or better in all courses within the program.
This program is not eligible for Title IV Federal Financial Aid.

+ indicates course has prerequisites and/or co-requisites.

<table>
<thead>
<tr>
<th>Program Prerequisites: None</th>
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</thead>
<tbody>
<tr>
<td><strong>Required Courses</strong></td>
</tr>
<tr>
<td>ELC103</td>
</tr>
<tr>
<td>ELC119+</td>
</tr>
<tr>
<td>ELC123</td>
</tr>
<tr>
<td>ELC160+</td>
</tr>
<tr>
<td>ELC164</td>
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</table>

**ELECTRICAL TECHNOLOGY - RESIDENTIAL WIRING**

**CERTIFICATE OF COMPLETION IN ELECTRICAL TECHNOLOGY - RESIDENTIAL WIRING**

(15 CREDITS; CODE 5756N)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Industrial Technology
Apprenticeship Manager: Anna Lopez

The Certificate of Completion (CCL) in Electrical Technology - Residential Wiring is specifically designed to provide a foundation of fundamental electrical knowledge and skills in residential electrical applications. These include use of tools, applied calculations, theories and concepts of electricity and electronics, residential wiring and codes. The Certificate of Completion lays the framework for the International Code Council (ICC) and International Association of Electrical Inspectors (IAEI) certification exams. Students are admitted to the Certificate of Completion in Electrical Technology - Residential Wiring program only through the Electric League of Arizona.

**Program Notes:**
Students must earn a grade of C or better in all courses within the program.
This program is not eligible for Title IV Federal Financial Aid.
+ indicates course has prerequisites and/or co-requisites.

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<tr>
<th>Admission Criteria:</th>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Program Prerequisites: None</th>
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</thead>
<tbody>
<tr>
<td><strong>Required Courses</strong></td>
</tr>
<tr>
<td>MET109</td>
</tr>
</tbody>
</table>
**Certificate & Degree Programs 2019-2020**

**INDUSTRIAL DESIGN TECHNOLOGY: DESIGN SPECIALIST: SOLIDWORKS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MET112+</td>
<td>Inspection Techniques</td>
<td>3</td>
</tr>
<tr>
<td>MET113+</td>
<td>Applied Geometric Dimensioning and Tolerance</td>
<td>3</td>
</tr>
<tr>
<td>MET220+</td>
<td>Fundamentals of Coordinate Measuring Machines (CMM)</td>
<td>3</td>
</tr>
<tr>
<td>MET231+</td>
<td>Manufacturing Processes and Materials</td>
<td>3</td>
</tr>
<tr>
<td>MET260+</td>
<td>Tooling and Fixturing</td>
<td>3</td>
</tr>
<tr>
<td>MET286AE+</td>
<td>Solid Design I: Part Modeling: SolidWorks</td>
<td>3</td>
</tr>
<tr>
<td>MET288AE+</td>
<td>Solid Design II: Advanced Part Modeling: SolidWorks</td>
<td>3</td>
</tr>
<tr>
<td>MET289AE+</td>
<td>Solid Design III: Detailing/GD&amp;T: SolidWorks</td>
<td>3</td>
</tr>
<tr>
<td>MET290AE+</td>
<td>Solid Design IV: Assembly and Kinematics: SolidWorks</td>
<td>3</td>
</tr>
<tr>
<td>MET291AE+</td>
<td>Solid Design: Certified SolidWorks Associate / Certified SolidWorks Professional Test Preparation (1) OR</td>
<td>1</td>
</tr>
<tr>
<td>MET298AA+</td>
<td>Special Projects (1)</td>
<td></td>
</tr>
<tr>
<td>MET292AE+</td>
<td>Solid Design 3D Printing: Techniques in Additive Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>MET293AE+</td>
<td>Solid Design: Surface Modeling: SolidWorks (3) AND/OR</td>
<td></td>
</tr>
<tr>
<td>MET294AE+</td>
<td>Solid Design: Sheet Metal: SolidWorks (3) AND/OR</td>
<td>3</td>
</tr>
<tr>
<td>MET298AC+</td>
<td>Special Projects (3)</td>
<td>6-9</td>
</tr>
<tr>
<td>ENG101+</td>
<td>First-Year Composition (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>ENG102+</td>
<td>First-Year Composition for ESL (3) AND</td>
<td></td>
</tr>
<tr>
<td>ENG107+</td>
<td>First-Year Composition (3) OR</td>
<td></td>
</tr>
<tr>
<td>ENG108+</td>
<td>First-Year Composition for ESL (3) AND</td>
<td></td>
</tr>
<tr>
<td>ENG111+</td>
<td>Technical and Professional Writing (3)</td>
<td>6</td>
</tr>
</tbody>
</table>

General Education Requirement: 21-27 credits

Any approved general education course from the Oral Communication area except COM225 Public Speaking. 3

**Production - CNC Machinist**

**Certificate of Competency in CNC Machinist**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISP116</td>
<td>Computer Foundations</td>
<td>24</td>
</tr>
<tr>
<td>MTO106</td>
<td>Machining Fundamentals and Geometric Dimensioning &amp; Tolerancing</td>
<td>144</td>
</tr>
<tr>
<td>MTO107</td>
<td>Bench Work, Layout and Drill Press Operations</td>
<td>102</td>
</tr>
<tr>
<td>MTO119</td>
<td>Manual Mill Operations</td>
<td>108</td>
</tr>
<tr>
<td>MTO121</td>
<td>Manual Lathe Operations</td>
<td>150</td>
</tr>
<tr>
<td>MTO140</td>
<td>CNC Lathe Programming and Operations</td>
<td>150</td>
</tr>
<tr>
<td>MTO132</td>
<td>CNC Mill Programming and Operations</td>
<td>150</td>
</tr>
</tbody>
</table>

Total Program Hours: 828

**Certificate of Completion (CCL) in Industrial Design Technology: Design Specialist: SolidWorks**

- Indicates course has prerequisites and/or co-requisites.
- Indicates any module suffixed courses.

Program Notes:

The Certificate of Completion (CCL) in Industrial Design Technology: Design Specialist: SolidWorks prepares students for careers as technical assistants, engineering technicians or hands on product designers. This expertise will allow employment in a variety of hi-tech product development and manufacturing companies. The program includes courses designed to provide students with a working knowledge in the field of product design, product development and rapid part manufacturing. Competency and technical expertise will be learned on industry specific three-dimensional 3D Solid Design software, 3D printers, and mechanical design simulation software. The core specialty of the program is hands-on experience with solid design.

Program Notes:

Students must earn a grade of C or better for all courses required within the program.

+ Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.

Admission Criteria:

Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher, or permission of Department or Division.

Program Prerequisites: None

Required Courses:

<table>
<thead>
<tr>
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<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>MET112+</td>
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<td>Manufacturing Processes and Materials</td>
<td>3</td>
</tr>
<tr>
<td>MET260+</td>
<td>Tooling and Fixturing</td>
<td>3</td>
</tr>
<tr>
<td>MET286AE+</td>
<td>Solid Design I: Part Modeling: SolidWorks</td>
<td>3</td>
</tr>
<tr>
<td>MET288AE+</td>
<td>Solid Design II: Advanced Part Modeling: SolidWorks</td>
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<td>Solid Design III: Detailing/GD&amp;T: SolidWorks</td>
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<td>Solid Design IV: Assembly and Kinematics: SolidWorks</td>
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<tr>
<td>MET291AE+</td>
<td>Solid Design: Certified SolidWorks Associate / Certified SolidWorks Professional Test Preparation (1) OR</td>
<td>1</td>
</tr>
</tbody>
</table>

General Education Requirement: 21-27 credits

Any approved general education course from the Oral Communication area except COM225 Public Speaking. 3

Any approved general education course from the Humanities, Arts and Design area. 3

Any approved general education course from the Social-Behavioral Sciences area. 3

**Production - CNC Machinist**

**Certificate of Competency in CNC Machinist**

(828 CLOCKS HOURS; CODE 1700–DAY/1705–NIGHT)

Division: Trades & Technology - Precision Machining

Program Manager: R. Mark Woehl

The Certificate of Competency (CCT) for CNC Machinist introduces the knowledge in reading blueprints and performing precision measurement. Learn to set up and operate manual mills, lathes and grinders. Learn to set up and operate computer numerical control (CNC) lathes and mills. Develop skills maintaining manual and CNC machines.

Program Notes:

Standards aligned to Industry credentials through the National Institute for Metalworking Skills.

**Required Courses**

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<td>150</td>
</tr>
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<td>MTO132</td>
<td>CNC Mill Programming and Operations</td>
<td>150</td>
</tr>
</tbody>
</table>

Total Program Hours: 828

**Certificate of Completion (CCL) in Industrial Design Technology: Design Specialist: SolidWorks**

- Indicates course has prerequisites and/or co-requisites.
- Indicates any module suffixed courses.
## Certificate & Degree Programs 2019-2020

### INDUSTRIAL DESIGN TECHNOLOGY: DESIGN SPECIALIST: SOLIDWORKS

**Certificate of Completion in Industrial Design Technology: Design Specialist: SolidWorks**

(22 Credits; Code 5642)

**Program Director:** David Zamora

The Certificate of Completion (CCL) in Industrial Design Technology: Design Specialist: SolidWorks prepares students for careers as technical assistants, engineering technicians or hands on product designers. This expertise will allow employment in a variety of hi-tech product development and manufacturing companies. The program includes courses designed to provide students with a working knowledge in the field of product design, product development and rapid part manufacturing. Competency and technical expertise will be learned on industry specific three-dimensional 3D Solid Design software, 3D printers, and mechanical design simulation software. The core specialty of the program is hands-on experience with solid design.

**Program Notes:**

Students must earn a grade of C or better in all courses within the program.

+ indicates course has prerequisites and/or corequisites.

### Program Prerequisites:

None

### Required Courses

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<tr>
<td>MET260+</td>
<td>Tooling and Fixturing</td>
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<tr>
<td>MET288AE+</td>
<td>Solid Design II: Advanced Part Modeling; SolidWorks</td>
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<tr>
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<td>Solid Design IV: Assembly and Kinematics; SolidWorks</td>
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</tr>
<tr>
<td>MET291AE+</td>
<td>Solid Design: Certified SolidWorks Associate / Certified SolidWorks Professional Test Preparation (1) OR</td>
<td>6-9</td>
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<tr>
<td>MET298AA+</td>
<td>Special Projects (1)</td>
<td>1</td>
</tr>
<tr>
<td>MET292AE</td>
<td>Solid Design 3D Printing: Techniques in Additive Manufacturing</td>
<td>3</td>
</tr>
<tr>
<td>MET293AE</td>
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<td>MET298AC+</td>
<td>Special Projects (3)</td>
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<tr>
<td>ENG102+</td>
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<tr>
<td>ENG111+</td>
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<td>MAT120+</td>
<td>Intermediate Algebra (5) OR</td>
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<td>MAT122+</td>
<td>Intermediate Algebra (3) OR</td>
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<td>PHY101+</td>
<td>Introduction to Physics (4) OR</td>
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<tr>
<td>CHM130+</td>
<td>Fundamental Chemistry (3)</td>
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</table>

Any approved general education course from the Humanities, Arts and Design area... 3

Any approved general education course from the Social-Behavioral Sciences area... 3

Any approved general education course from the Oral Communication area... 3

### General Education Requirement

- **21-27**
  - **1**
  - **3**
  - **6**

**Certificate & Degree Programs 2019-2020**

### PRODUCTION - CNC MACHINIST

**Certificate of Competency in CNC Machinist**

(828 Clock Hours; Code 1700-Day/1705-Night)

**Division:** Trades & Technology - Precision Machining

**Program Manager:** R. Mark Woehl

The Certificate of Competency (CCT) for CNC Machinist introduces the knowledge in reading blueprints and performing precision measurement. Learn to set up and operate manual mills, lathes and grinders. Learn to set up and operate computer numerical control (CNC) lathes and mills. Develop skills maintaining manual and CNC machines.

**Program Notes:**

Standards aligned to Industry credentials through the National Institute for MetalWorking Skills.

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<tr>
<td>MTO132</td>
<td>CNC Mill Programming and Operations</td>
<td>150</td>
</tr>
</tbody>
</table>

**Total Program Hours:** 828

+ indicates course has prerequisites and/or corequisites.

**Indicates any module suffixed courses.
Certificate & Degree Programs 2019-2020

PRODUCTION TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE IN PRODUCTION TECHNOLOGY
(61-79 CREDITS; CODE 3255)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: David Zamora

The Associate in Applied Science (AAS) in Production Technology program prepares students for employment in various engineering, manufacturing and quality disciplines related to productivity improvement, in a variety of manufacturing industries. Students develop skills with a specialization emphasis in Computer Numerical Control (CNC), Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) Programming Technician. The program of study includes quality practices and leadership principles with an emphasis on skills and knowledge essential for technicians who will be working in the related disciplines. Upon completion of the Associate in Applied Science Degree, a student will have acquired a working knowledge of how to function as a technician and perform duties typically associated in Production Technology as a CNC technician.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisite and/or corequisites.

Admission Criteria:
Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher, or permission of Department or Division.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 40
MET109 Machine Trades Print Reading (3) OR
Satisfactory completion of departmental credit by examination (3) ................................................................. 3
MET112+ Inspection Techniques .......................................................................................................................... 3
MET113+ Applied Geometric Dimensioning and Tolerance ............................................................................ 3
GTC/MET206 CNC Programming ...................................................................................................................... 3
MET207+ CNC Mill: Operator Training I ........................................................................................................... 3
MET208+ CNC Lathe: Operator Training I ......................................................................................................... 3
MET215+ Advanced CNC Operation ................................................................................................................. 3
MET220+ Fundamentals of Coordinate Measuring Machines (CMM) ................................................................ 3
MET231+ Manufacturing Processes and Materials ............................................................................................ 3
MET236AD+ CAD/CAM Computer Numerical Control (CNC) Programming: MasterCam .................................. 3
MET246AD+ Advanced CAD/CAM CNC Programming: MasterCam ............................................................... 3
MET266AD+ SolidCAM Computer Numerical Control (CNC) Programming: MasterCam ................................. 3
MET267AD+ MasterCam Certified Programmer Mill Level I: Test Preparation: CPgM1 ........................................ 3
MET286AE+ Solid Design I: Part Modeling: Solid Works .................................................................................... 3

Restricted Electives ............................................................................................................................................. 0-12

Students preparing to gain expertise in Quality Assurance may complete zero (0) to twelve (12) credits with permission of the Production Technology Program Director.

MET119 Workplace Quality Systems ................................................................................................................ 3
MET224+ Applied Statistical Process Control Methods ....................................................................................... 3
MET254+ Lean and Six Sigma Applied Concepts ............................................................................................... 3
MET284+ Advanced Quality Process Methods .................................................................................................. 3

General Education Requirement ...................................................................................................................... 21-27

Certificate & Degree Programs 2019-2020

PRODUCTION TECHNOLOGY: CNC TECHNOLOGY
CERTIFICATE OF COMPLETION IN PRODUCTION TECHNOLOGY: CNC TECHNOLOGY
(27-30 CREDITS; CODE 5440)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: David Zamora

The Certificate of Completion (CC) in Production Technology: CNC Technology program is designed for students to obtain the skills required to be considered as a Computer Numerical Control (CNC) Technician in a manufacturing environment. Students develop skills with a specialization emphasis in Computer Numerical Control (CNC), Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) Programming Technician.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisite and/or corequisites.

Admission Criteria:
Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher, or permission of Department or Division.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 27-30
MET109 Machine Trades Print Reading (3) OR
Satisfactory completion of departmental credit by examination ........................................................................ 3
MET112+ Inspection Techniques ........................................................................................................................ 3
MET113+ Applied Geometric Dimensioning and Tolerance ........................................................................ 3
GTC/MET206 CNC Programming .................................................................................................................... 3
MET207+ CNC Mill: Operator Training I ......................................................................................................... 3
MET208+ CNC Lathe: Operator Training I ......................................................................................................... 3
MET215+ Advanced CNC Operation ................................................................................................................ 3
MET254+ Lean and Six Sigma Applied Concepts ............................................................................................. 3

Certificate & Degree Programs 2019-2020

Any approved general education course from Oral Communication area except COM225 Public Speaking ......................................................................................................................... 3
CRE101+ College Critical Reading and Critical Thinking (3) OR
Equivalent as indicated by assessment on District placement exam (0) .......................................................... 0-3
MAT120+ Intermediate Algebra (5) OR
MAT121+ Intermediate Algebra (4) OR
MAT122+ Intermediate Algebra (3) OR
Equivalent course or satisfactory completion of a higher level mathematics course ................................. 3-5

Any approved general education course from the Humanities, Arts and Design area ........................................ 2-3
Any approved general education course from the Social-Behavioral Science area ....................................... 3
Any approved general education course from the Natural Science area .......................................................... 4
PRODUCTION TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE IN PRODUCTION TECHNOLOGY
(61-79 CREDITS; CODE 3255)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: David Zamora

The Associate in Applied Science (AAS) in Production Technology program prepares students for employment in various engineering, manufacturing and quality disciplines related to productivity improvement, in a variety of manufacturing industries. Students develop skills with a specialization emphasis in Computer Numerical Control (CNC), Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) Programming Technician. The program of study includes quality practices and leadership principles with an emphasis on skills and knowledge essential for technicians who will be working in the related disciplines. Upon completion of the Associate in Applied Science Degree, a student will have acquired a working knowledge of how to function as a technician and perform duties typically associated in Production Technology as a CNC technician.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisite and/or corequisites.

Admission Criteria:
Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher, or permission of Department or Division.

Program Prerequisites: None

Required Courses .................................................................................................................................................... 40

MET109 Machine Trades Print Reading (3) OR
Satisfactory completion of departmental credit by examination (3) ................................................................. 3

MET112+ Inspection Techniques ........................................................................................................................... 3
MET113+ Applied Geometric Dimensioning and Tolerance ................................................................................. 3
GTC/MET206 CNC Programming ..................................................................................................................... 3
MET207+ CNC Mill: Operator Training I ............................................................................................................... 3
MET208+ CNC Lathe: Operator Training I ........................................................................................................... 3
MET215+ Advanced CNC Operation .................................................................................................................. 3
MET220+ Fundamentals of Coordinate Measuring Machines (CMM) ................................................................ 3
MET231+ Manufacturing Processes and Materials ............................................................................................... 3
MET263AD+ CAD/CAM Computer Numerical Control (CNC) Programming: MasterCam .................................. 3
MET364AD+ Advanced CAD/CAM CNC Programming: MasterCam .............................................................. 3
MET266AD+ Solids CAD/CAM Programming: MasterCam .................................................................................. 3
MET276AD+ MasterCam Certified Programmer Mill Level I: Test Preparation: CPGm1 .............................................. 3
MET286AE+ Solid Design I: Part Modeling: Solid Works ...................................................................................... 3

Restricted Electives ............................................................................................................................................... 0-12

Students preparing to gain expertise in Quality Assurance may complete zero (0) to twelve (12) credits with permission of the Production Technology Program Director.

MET119 Workplace Quality Systems .................................................................................................................. 3
MET224+ Applied Statistical Process Control Methods ....................................................................................... 3
MET254+ Lean and Six Sigma Applied Concepts ............................................................................................... 3
MET284+ Advanced Quality Process Methods .................................................................................................. 3

General Education Requirement .......................................................................................................................... 21-27

Certificate & Degree Programs 2019-2020

PRODUCTION TECHNOLOGY: CNC TECHNOLOGY
CERTIFICATE OF COMPLETION IN PRODUCTION TECHNOLOGY: CNC TECHNOLOGY
(27-30 CREDITS; CODE 5440)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: David Zamora

The Certificate of Completion (CCL) in Production Technology: CNC Technology program is designed for students to obtain the skills required to be considered as a Computer Numerical Control (CNC) Technician in a manufacturing environment. Students develop skills with a specialization emphasis in Computer Numerical Control (CNC), Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) Programming Technician.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisite and/or corequisites.

Admission Criteria:
Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher, or permission of Department or Division.

Program Prerequisites: None

Required Courses .................................................................................................................................................. 27-30

MET109 Machine Trades Print Reading (3) OR
Satisfactory completion of departmental credit by examination .................................................................... 3

MET112+ Inspection Techniques .......................................................................................................................... 3
MET113+ Applied Geometric Dimensioning and Tolerance .............................................................................. 3
GTC/MET206+ CNC Programming .................................................................................................................... 3
MET207+ CNC Mill: Operator Training I ............................................................................................................ 3
MET208+ CNC Lathe: Operator Training I ......................................................................................................... 3
MET215+ Advanced CNC Operation ................................................................................................................ 3

CERTIFICATE & DEGREE PROGRAMS 2019-2020

+ Indicates course has prerequisite and/or co-requisites.
** Indicates any module suffixed courses.
The Certificate of Completion (CCL) in Production Technology: Quality Assurance program is designed for students to obtain the skills required to be considered as a quality technician in a manufacturing environment.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisite and/or corequisites.

Admission Criteria:
Math assessment score on District placement exam placing students into MAT090 or higher, or permission of Department.
Program Prerequisites: None

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisites and/or co-requisites.
++ indicates any suffixed course.

Admission Criteria:
A high school diploma OR GED equivalency is required. Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher level math course.
Program Prerequisites: None

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisite and/or co-requisites.
++ indicates any suffixed course.
PRODUCTION TECHNOLOGY: QUALITY ASSURANCE

CERTIFICATE OF COMPLETION IN PRODUCTION TECHNOLOGY: QUALITY ASSURANCE
(24 CREDITS; CODE 5441)

To qualify, students must earn a grade of C or better in all courses within the program.

Chair: Craig Urbanski
Division: Industrial Technology
Program Director: David Zamora

The Certificate of Completion (CCL) in Production Technology: Quality Assurance program is designed for students to obtain the skills required to be considered as a quality technician in a manufacturing environment.

Program Notes:
Students must earn a grade of C or better in all courses within the program.

+ indicates course has prerequisite and/or corequisites.

Admission Criteria:
Math assessment score on District placement exam placing students into MAT090 or higher, or permission of Department.

Program Prerequisites: None

Required Courses .................................................................................................................................................. 24

- MET113+ Applied Geometric Dimensioning and Tolerance ................................................................. 3
- MET119 Workplace Quality Systems ........................................................................................................ 3
- MET200+ Fundamentals of Coordinate Measuring Machines (CMM) ....................................................... 3
- MET224+ Statistical Process Control Methods ............................................................................................. 3
- MET231+ Manufacturing Processes and Materials ......................................................................................... 3
- MET254+ Lean and Six Sigma Applied Concepts ......................................................................................... 3
- MET268+ Advanced Quality Process Methods ............................................................................................ 3

WAS READIES WATER TREATMENT

CERTIFICATE OF COMPLETION IN WASTEWATER TREATMENT
(26 CREDITS; CODE 5136)

To qualify, students must earn a grade of C or better in all courses within the program.

Chair: Craig Urbanski

The Certificate of Completion (CCL) in Wastewater Treatment program is designed to provide students with knowledge and skills to meet the challenges of working in a Wastewater Treatment Plant and a Wastewater Collection System. Courses are designed to prepare students by developing skills in the operation and maintenance of wastewater treatment plants and wastewater collection systems. This program will also instruct students in procedures for effective preparation, analysis and interpretation of wastewater samples, and the treatment of wastewater for disease control.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisite and/or corequisites.
++ indicates any module suffixed course.

Admission Criteria:
A high school diploma or GED equivalency is required. Math assessment score on District placement exam placing students into MAT090 or higher.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 39-41

- WRT100+ Introduction to Water Resources ................................................................................................. 3
- WRT115+ Water Technology Calculations .................................................................................................. 3
- WRT121+ Operation of Wastewater Treatment Plants ............................................................................... 3
- WRT131+ Wastewater Collection Systems Operation and Maintenance ................................................. 3
- WRT140+ Water Quality for Treatment Industry Laboratory .................................................................... 1
- WRT190AA Water Resources Technologies Seminar ................................................................................. 1
- WRT204+ Water/Wastewater Maintenance/Mechanical Systems (3) OR Power and Instrumentation (3) .................................................................................................................................................. 3

WATER RESOURCES TECHNOLOGIES

ASSOCIATE OF APPLIED SCIENCE DEGREE IN WATER RESOURCES TECHNOLOGIES
(61-74 CREDITS; CODE 3830)

To qualify, students must earn a grade of C or better in all courses within the program.

Chair: Craig Urbanski

The Associate in Applied Science (AAS) in Water Resources Technologies program is designed to prepare students in theoretical and practical hands-on training in the monitoring of water quality and quantity as well as in water, wastewater, and industrial wastewater treatment. The emphasis is on federal, state, county, and city regulations affecting water quality and quantity management in addition to water/wastewater treatment. The students take part in the operation, calibration, and maintenance of water monitoring field instruments and water and wastewater treatment monitor field equipment.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisite and/or corequisites.
++ indicates any module suffixed course.

Admission Criteria:
A high school diploma or GED equivalency is required. Math assessment score on District placement exam placing students into MAT090 or higher.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 39-41

Students must select one (1) of two (2) tracks:
Track I: Hydrologic Studies

**BPC110** Computer Usage and Applications (3) OR
**CIS105** Survey of Computer Information Systems (3) .................................................. 3
**OSH106AA** Industrial Safety .......................................................... 3

**WRT100+** Introduction to Water Resources ................................................................. 3
**WRT117+** Geographic Information Systems (GIS) ......................................................... 3
**WRT125+** Surveying for Water Resources ................................................................. 2
**WRT130+** Groundwater Hydrology ................................................................. 3
**WRT140+** Water Quality for Treatment Industry ................................................................. 3
**WRT140L+** Water Quality for Treatment Industry Laboratory ......................................................... 1
**WRT150+** Introduction to Surface Water Data Collection ......................................................... 3
**WRT152+** Water Resources Field Investigations I: Surface Water and Groundwater ......................................................... 3
**WRT190A+** Water Resources Technologies Seminar ......................................................... 1
**WRT240+** Water Quality ................................................................. 3
**WRT240LL+** Water Quality Field Techniques ......................................................... 1
**WRT250+** Surface Water Hydrology ................................................................. 3
**WRT252+** Water Resources Field Investigations II: Surveying and Surface Water ......................................................... 3
**WRT260+** Applied Hydrology: Groundwater, Surface Water and Water Quality ......................................................... 3

Track II: Water and Wastewater Treatment

**BPC110** Computer Usage and Applications (3) OR
**CIS105** Survey of Computer Information Systems (3) .................................................. 3

**OSH106AA** Industrial Safety .......................................................... 3

**WRT100+** Introduction to Water Resources ................................................................. 3
**WRT103+** Industrial Pretreatment ................................................................. 3
**WRT110+** Principles of Water Treatment Plant Operations ......................................................... 3
**WRT115+** Water Technology Calculations ................................................................. 3
**WRT121+** Operation of Wastewater Treatment Plants ......................................................... 3
**WRT140+** Water Quality for Treatment Industry ................................................................. 3
**WRT140L+** Water Quality for Treatment Industry Laboratory ......................................................... 1
**WRT190A+** Water Resources Technologies Seminar ......................................................... 1
**WRT204+** Water/Wastewater Maintenance/Mechanical Systems ......................................................... 3
**WRT205+** Power and Instrumentation ................................................................. 3
**WRT221+** Water and Wastewater Treatment Plants Administration ......................................................... 3
**WRT240+** Water Quality ................................................................. 3
**WRT240LL+** Water Quality Field Techniques ......................................................... 1

Restricted Electives

Students preparing to enhance their skill set in the Water Industry may complete zero (0) to six (6) credits with permission of the Water Resources Program Director.

**WRT+****+** Any WRT Water Resource Technology course(s)
**AAA/CPD150** Strategies for College Success ......................................................... 3

Students may select only ONE of the three internship courses below for a restricted elective. Internship courses may not be taken more than once.

**WRT270AA+** Water Resources Internship (1) OR
**WRT270AB+** Water Resources Internship (2) OR
**WRT270AC+** Water Resources Internship (3) ......................................................... 0-3

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**WATER TREATMENT**

**CERTIFICATE OF COMPLETION IN WATER TREATMENT (28 CREDITS; CODE 5142)**

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Industrial Technology
Chair: Craig Urbanski

The Certificate of Completion (CCL) in Water Treatment program is designed to provide students with knowledge and skills to meet the challenges of working in the Water Treatment and Distribution field. Courses are designed to prepare students by developing skills in the operation and maintenance of a water treatment plant and a water distribution system. This program will also instruct students in effective preparation, analysis and interpretation of water samples, along with the public control components of the water cycle.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
+ Indicates course has prerequisites and/or corequisites.

Admission Criteria: A high school diploma OR GED equivalency is required. Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher level math course.

**General Education Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Group</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG101+</td>
<td>First-Year Composition (3) OR</td>
<td></td>
</tr>
<tr>
<td>ENG107+</td>
<td>First-Year Composition for ESL (3) AND</td>
<td>3</td>
</tr>
<tr>
<td>ENG102+</td>
<td>First-Year Composition (3) OR</td>
<td></td>
</tr>
<tr>
<td>ENG108+</td>
<td>First-Year Composition for ESL (3) OR</td>
<td></td>
</tr>
<tr>
<td>ENG11+</td>
<td>Technical and Professional Writing (3)</td>
<td>6</td>
</tr>
<tr>
<td>CRE101+</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equivalent by assessment on District placement exam (0)</td>
<td>0-3</td>
</tr>
<tr>
<td>MAT120, MAT121 or MAT122 will meet the Associate in Applied Science degree requirements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT120+</td>
<td>Intermediate Algebra (5) OR</td>
<td></td>
</tr>
<tr>
<td>MAT121+</td>
<td>Intermediate Algebra (4) OR</td>
<td></td>
</tr>
<tr>
<td>MAT122+</td>
<td>Intermediate Algebra (3) OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Satisfactory completion of a higher level mathematics course</td>
<td>3-5</td>
</tr>
</tbody>
</table>

For students intending to transfer to the university, MAT150, MAT151 or MAT152 is recommended.

Any approved general education course from the Humanities, Arts and Design area........................................... 3

**SS111 Sustainable Cities 3 is recommended**

Any approved general education course from the Social-Behavioral Sciences area........................................... 3

**BIO105** Environmental Biology (4) OR
**CHM130+** Fundamental Chemistry (3) AND
**CHM130LL+** Fundamental Chemistry Laboratory (1) OR
**GLG10** Geological Disasters and the Environment (3) AND
**GLG11** Geological Disasters and the Environment Lab (1) ......................................................... 4

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**Certification Requirements**

+ Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
**WATER TREATMENT**

**CERTIFICATE OF COMPLETION IN WATER TREATMENT**

(26 CREDITS, CODE 5142)

To qualify, students must earn a grade of C or better in all courses within the program. Division: Industrial Technology

Chair: Craig Urbanski

The Certificate of Completion (CCL) in Water Treatment program is designed to provide students with knowledge and skills to meet the challenges of working in the Water Treatment and Distribution field. Courses are designed to prepare students by developing skills in the operation and maintenance of a water treatment plant and a water distribution system. This program will also instruct students in effective preparation, analysis and interpretation of water samples, along with the public control components of the water cycle.

**Program Notes:**

Students must earn a grade of C or better for all courses within the program.

+ indicates course has prerequisites and/or corequisites.

**Admission Criteria:** A high school diploma or GED equivalency is required. Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher level math course.

**WATER TREATMENT**

Certificate & Degree Programs 2019-2020

-**General Education Requirements** - 22-27
- ENG101+  First-Year Composition (3) OR
- ENG107+  First-Year Composition for ESL (3) AND
- ENG102+  First-Year Composition (3) OR
- ENG108+  First-Year Composition for ESL (3) OR
- ENG11+  Technical and Professional Writing (3) - 6

Any approved general course in the Oral Communication Area, except COM125. 

- CRE101+  College Critical Reading and Critical Thinking (3) OR
- Equivalent by assessment on District placement exam (0) - 3

MAT120, MAT121 or MAT122 will meet the Associate in Applied Science degree requirements.

- MAT120+  Intermediate Algebra (5) OR
- MAT121+  Intermediate Algebra (4) OR
- MAT122+  Intermediate Algebra (3) OR

Satisfactory completion of a higher level mathematics course - 3-5

For students intending to transfer to the university, MAT150, MAT151 or MAT152 is recommended.

Any approved general education course from the Humanities, Arts and Design area - 3

SSH111 Sustainable Cities 3 is recommended.

Any approved general education course from the Social-Behavioral Sciences area - 3

- BIO105  Environmental Biology (4) OR
- CHM130+  Fundamental Chemistry (3) AND
- CHM130LL+  Fundamental Chemistry Laboratory (1) OR
- CHM130AA+  Fundamental Chemistry with Lab (4) OR
- GLG110  Geological Disasters and the Environment (3) AND
- GLG111  Geological Disasters and the Environment Lab (1) - 4

**WATER TREATMENT**

Certificate & Degree Programs 2019-2020

-**General Education Requirements** - 22-27
- ENG101+  First-Year Composition (3) OR
- ENG107+  First-Year Composition for ESL (3) AND
- ENG102+  First-Year Composition (3) OR
- ENG108+  First-Year Composition for ESL (3) OR
- ENG11+  Technical and Professional Writing (3) - 6

Any approved general course in the Oral Communication Area, except COM125. 

- CRE101+  College Critical Reading and Critical Thinking (3) OR
- Equivalent by assessment on District placement exam (0) - 3

MAT120, MAT121 or MAT122 will meet the Associate in Applied Science degree requirements.

- MAT120+  Intermediate Algebra (5) OR
- MAT121+  Intermediate Algebra (4) OR
- MAT122+  Intermediate Algebra (3) OR

Satisfactory completion of a higher level mathematics course - 3-5

For students intending to transfer to the university, MAT150, MAT151 or MAT152 is recommended.

Any approved general education course from the Humanities, Arts and Design area - 3

SSH111 Sustainable Cities 3 is recommended.

Any approved general education course from the Social-Behavioral Sciences area - 3

- BIO105  Environmental Biology (4) OR
- CHM130+  Fundamental Chemistry (3) AND
- CHM130LL+  Fundamental Chemistry Laboratory (1) OR
- CHM130AA+  Fundamental Chemistry with Lab (4) OR
- GLG110  Geological Disasters and the Environment (3) AND
- GLG111  Geological Disasters and the Environment Lab (1) - 4
Certificate & Degree Programs 2019-2020

Program Prerequisites: None

WELDING: COMBINATION
CERTIFICATE OF COMPETENCY IN WELDING: COMBINATION
(828 CLOCK HOURS; CODE 1760–DAY/1765–NIGHT)
Division: Trades & Technology - Welding
Program Manager: R. Mark Woehl

The Certificate of Competency (CCT) for Welding: Combination explores various disciplines such as gas metal arc welding (GMAW), flux core arc welding (FCAW), gas tungsten arc welding (GTAW) processes and shielded metal arc welding (SMAW). Gain skills in the welding lab in accordance with welding codes including: American Welding Society D1.1, American Petroleum Institute-1104 Code and/or the American Society of Mechanical Engineers Boiler Pressure Vessel Code.

Program Notes:
Standards aligned to industry credentials through The National Center for Construction Education and Research (NCCER) as well as weld qualifications to AWS D1.1 standard.

Required Courses

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISP116 Computer Foundations</td>
<td>24</td>
</tr>
<tr>
<td>WTO111 Introduction to Welding</td>
<td>60</td>
</tr>
<tr>
<td>WTO112 Basic Welding (SMAW)</td>
<td>120</td>
</tr>
<tr>
<td>WTO113 Welding Techniques (SMAW)</td>
<td>94</td>
</tr>
<tr>
<td>WTO114 Qualification Welds (SMAW)</td>
<td>124</td>
</tr>
<tr>
<td>WTO121 Welding (GMAW)</td>
<td>140</td>
</tr>
<tr>
<td>WTO122 Welding (FCAW)</td>
<td>116</td>
</tr>
<tr>
<td>WTO123 Welding (GTAW) Carbon Steel</td>
<td>70</td>
</tr>
<tr>
<td>Total Program Hours</td>
<td>828</td>
</tr>
</tbody>
</table>

WELDING: TIG (GTAW)
CERTIFICATE OF COMPETENCY IN WELDING: TIG (GTAW)
(728 CLOCK HOURS; CODE 1780–DAY/1785–NIGHT)
Division: Trades & Technology - Welding
Program Manager: R. Mark Woehl

The Certificate of Competency (CCT) for Welding: Tig (GTAW) seeks to build skills in gas tungsten arc welding (GTAW-Tig). Learn welding safety and the fundamentals of GTAW (Tig) welding process. Includes welding positions on edge, corner, lap and t-joints in accordance with the American Welding Society D1.1 Sheet Materials in Aircraft and Aerospace welding code. GTAW techniques for carbon steel, aluminum and stainless steel.

Program Notes:
Standards aligned to industry credentials through The National Center for Construction Education and Research (NCCER) as well as weld qualifications to AWS D1.1 standard.

Required Courses

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<tr>
<td>WTO122 Welding (FCAW)</td>
<td>116</td>
</tr>
<tr>
<td>WTO123 Welding (GTAW) Carbon Steel</td>
<td>70</td>
</tr>
<tr>
<td>Total Program Hours</td>
<td>828</td>
</tr>
</tbody>
</table>

WELDING: PIPE AND PLATE
CERTIFICATE OF COMPETENCY IN WELDING: PIPE AND PLATE
(828 CLOCK HOURS; CODE 1770–DAY/1775–NIGHT)
Division: Trades & Technology - Welding
Program Manager: R. Mark Woehl

The Certificate of Competency (CCT) for Welding: Pipe and Plate introduces various disciplines such as gas tungsten arc welding (GTAW) processes and shielded metal arc welding (SMAW). Learn foundational skills and knowledge in the basics of plate and pipe welding in accordance with welding codes including: American Welding Society D1.1, American Petroleum Institute-1104 Code and/or the American Society of Mechanical Engineers Boiler Pressure Vessel Code.

Program Notes:
Standards aligned to industry credentials through The National Center for Construction Education and Research (NCCER) as well as weld qualifications to AWS D1.1 standard, ASME IX standard and/or API 1104 standard.

Required Courses

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Clock Hours</th>
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</thead>
<tbody>
<tr>
<td>WTO111 Introduction to Welding</td>
<td>60</td>
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<td>WTO112 Basic Welding (SMAW)</td>
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<td>WTO114 Qualification Welds (SMAW)</td>
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<td>WTO121 Welding (GMAW)</td>
<td>140</td>
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<tr>
<td>WTO122 Welding (FCAW)</td>
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<td>WTO123 Welding (GTAW) Carbon Steel</td>
<td>70</td>
</tr>
<tr>
<td>Total Program Hours</td>
<td>828</td>
</tr>
</tbody>
</table>
WELDING: COMBINATION
CERTIFICATE OF COMPETENCY IN WELDING: COMBINATION
(828 CLOCK HOURS; CODE 1760–DAY/1765–NIGHT)
Division: Trades & Technology - Welding
Program Manager: R. Mark Woehl

The Certificate of Competency (CC) for Welding: Combination explores various disciplines such as gas metal arc welding (GMAW), flux core arc welding (FCAW), gas tungsten arc welding (GTAW) processes and shielded metal arc welding (SMAW). Gain skills in the welding lab in accordance with welding codes including: American Welding Society D1.1, ASME IX and/or API 1104 standard. Learn about thermal cutting processes with oxygen-fuel, plasma arc cutting and air carbon arc gouging.

Program Notes:
Standards aligned to Industry credentials through The National Center for Construction Education and Research (NCCER) as well as weld qualifications to AWS D1.1 standard.

WELDING: TIG (GTAW)
CERTIFICATE OF COMPETENCY IN WELDING: TIG (GTAW)
(728 CLOCK HOURS; CODE 1760–DAY/1765–NIGHT)
Division: Trades & Technology - Welding
Program Manager: R. Mark Woehl

The Certificate of Competency (CC) for Welding: TIG (GTAW) seeks to build skills in gas tungsten arc welding (GTAW-TIG). Learn welding safety and the fundamentals of GTAW (TIG) welding process. Includes welding positions on edge, corner, lap and T-joints in accordance with the American Welding Society D17.1 Sheet Materials in Aircraft and Aerospace welding code. GTAW techniques for carbon steel, aluminum and stainless steel.

Program Notes:
Standards aligned to Industry credentials through The National Center for Construction Education and Research (NCCER) as well as weld qualifications to AWS D17.1 standard.

** Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Clock Hours</th>
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<tbody>
<tr>
<td>ISP116</td>
<td>Computer Foundations</td>
<td>24</td>
</tr>
<tr>
<td>COR101</td>
<td>Core: Introduction to Craft Skills</td>
<td>80</td>
</tr>
<tr>
<td>WTO111</td>
<td>Introduction to Welding</td>
<td>60</td>
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<tr>
<td>WTO112</td>
<td>Basic Welding (SMAW)</td>
<td>120</td>
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<td>WTO113</td>
<td>Welding Techniques (SMAW)</td>
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<td>WTO114</td>
<td>Qualification Welds (SMAW)</td>
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<td>WTO121</td>
<td>Welding (GMAW)</td>
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<td>WTO122</td>
<td>Welding (FCAW)</td>
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<tr>
<td>WTO123</td>
<td>Welding (GTAW) Carbon Steel</td>
<td>70</td>
</tr>
<tr>
<td>Total Program Hours:</td>
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<td>828</td>
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</tbody>
</table>

** Required Courses

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<tr>
<td>Total Program Hours:</td>
<td></td>
<td>828</td>
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</tbody>
</table>
FIELD OF INTEREST: BEHAVIORAL SCIENCES AND HUMAN SERVICES

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Arts Degree (AA) is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors in the Liberal Arts or programs of study other than business or science.

- Associate in Applied Science Degree (AAS) is recommended for students who wish to gain a depth of technical expertise by completing an occupational program that leads directly into the world of work.

- Certificate of Completion (CCL) is a program of study that is recommended for students who wish to gain technical expertise in an occupational program that requires less time and credit hours to complete than an AAS degree. Some CCLs are also included in the AAS degree program of study.

Note: It is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

PROGRAMS

(Click program title for detailed information.)

COURT REPORTING: JUDICIAL (AAS)
COURT REPORTING: JUDICIAL (CCL)
COURT REPORTING: SCOPING/TRANSCRIPTION (CCL)
HOMELAND SECURITY (CCL)

TRANSFER PATHWAY PROGRAMS

MCCCD Transfer Pathway Programs were created to allow Maricopa Community College students a smooth transition into an in-state college such as ASU, NAU, or UA.

(Click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

POLITICAL SCIENCE (AA)
PSYCHOLOGY (AA)
SOCIAL WORK (AA)

COURT REPORTING: JUDICIAL

ASSOCIATE IN APPLIED SCIENCE DEGREE IN COURT REPORTING: JUDICIAL (85-90 CREDITS; CODE 3194)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Business and Information Technologies

Program Director: Stephanie Stearnan

The Associate in Applied Science (AAS) in Court Reporting: Judicial program prepares students for court reporting. Court reporters work for the government, courts, large business corporations, freelance reporting agencies, and television stations.

GateWay Community College is one of the few community colleges across the nation to offer a National Court Reporters Association certified court reporting program which includes real-time machine shorthand, computerized machine shorthand theory, speed development, transcription, court practice and overview in video application. Upon completion of the program, students will be qualified to enter the court reporting profession subject to any and all individual state requirements. In addition, students are assisted in preparing for the National Court Reporters Association. Registered Professional Reporter (RPR) Examination and the Arizona Written Knowledge Test.

Program Notes:

Students must earn a grade of C or better in all courses within the program.

+ indicates course has prerequisite and/or corequisites.

++ indicates any module suffixed courses.

Admission Criteria:

1. 45 wpm typing speed based on testing at GateWay assessment center.
2. Students must pass two timed writings of five minutes with a minimum speed of 45 wpm in order to complete this certificate.
3. ENGLISH ASSESSMENT - Placement into ENG101/ENG107 First-Year Composition on District placement exam OR permission of Department or Division.
4. Transcript(s) of high school graduation OR equivalent must be on file in the Admissions and Records Office.

Program Prerequisites: None

Required Courses ................................................................. 64-66

BPC101AA Introduction to Computers I (1) OR Demonstrated proficiency in computer usage as determined by Program Director ......................................................... 0-1

BPC131DX+ Intermediate Word (1) OR Demonstrated proficiency in word processing as determined by Program Director ......................................................... 0-1

CTR101+ Court Reporting: Machine Shorthand Theory Block I ................................................................. 6
CTR102+ Court Reporting: Machine Shorthand Theory Block II ............................................................... 6
CTR105 Court Reporting: Punctuation and Grammar ....................................................................... 1
CTR106 Court Reporting: Legal Terminology ............................................................... 1
CTR107 Court Reporting: Medical Terminology ................................................................. 1
CTR209+ Judicial Procedures for Court Reporting ................................................................. 3
CTR211+ Judicial Internship ........................................................................... 1
CTR215+ Computer-Aided Transcription ........................................................................... 3
CTR251AA+ Court Reporting Skill Building: Block III Literary Material ........................................... 4
CTR251AB+ Court Reporting Skill Building: Block III Jury Charge Material ................................... 4
CTR251AC+ Court Reporting Skill Building: Block III Question/Answer Testimony Material ............ 6
CTR252AA+ Court Reporting Skill Building: Block IV Literary Material .......................................... 4
CTR252AB+ Court Reporting Skill Building: Block IV Jury Charge Material ................................... 4
CTR252AC+ Court Reporting Skill Building: Block IV Question/Answer Testimony Material ............ 6
CTR253AA+ Court Reporting Skill Building: Block V Literary Material ................................................. 4

+ Indicates course has prerequisites and/or co-requisites.

++ Indicates any module suffixed courses.
COURT REPORTING: JUDICIAL

ASSOCIATE IN APPLIED SCIENCE DEGREE IN COURT REPORTING: JUDICIAL
(85-90 CREDITS; CODE 3194)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Stephanie Stearman

The Associate in Applied Science (AAS) in Court Reporting: Judicial program prepares students for court reporting. Court reporters work for the government, courts, large business corporations, freelance reporting agencies, and television stations.

GateWay Community College is one of the few community colleges across the nation to offer a National Court Reporters Association certified court reporting program which includes realtime machine shorthand, computerized machine shorthand theory, speed development, transcription, court practice and overview in video application. Upon completion of the program, students will be qualified to enter the court reporting profession subject to any and all individual state requirements. In addition, students are assisted in preparing for the National Court Reporters Association. Registered Professional Reporter (RPR) Examination and the Arizona Written Knowledge Test.

GateWay's Court Reporting Program is a performance-based program which encompasses both traditional academic courses and skill-based courses. Challenges in the program can involve the time to practice outside of class time, developing hand-mind coordination, and mastering a new language (stenography).

Program Notes:
Students must earn a grade of C or better for all courses within the program.
+ indicates course has prerequisite and/or corequisites.
++ indicates any suffixed courses.

Admission Criteria:
1. 45 wpm typing speed based on typing test at GateWay assessment center.
2. Students must pass two timed writings of five minutes with a minimum speed of 45 wpm in order to complete this certificate.
3. ENGLISH ASSESSMENT - Placement into ENG101/ENG107 First-Year Composition on District placement exam OR permission of Department or Division.
4. Transcript(s) of high school graduation OR equivalent must be on file in the Admissions and Records Office.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 64-66
BPC101AA Introduction to Computers I (1) OR Demonstrated proficiency in computer usage as determined by Program Director ................................. 0-1

BPC131DK+ Intermediate Word (1) OR Demonstrated proficiency in word processing as determined by Program Director .................. 0-1

CTR101+ Court Reporting: Machine Shorthand Theory Block I ................................................................. 6
CTR102+ Court Reporting: Machine Shorthand Theory Block II ............................................................... 6
CTR105 Court Reporting: Punctuation and Grammar ............................................................ 1
CTR106 Court Reporting: Legal Terminology .............................................................................................. 1
CTR107 Court Reporting: Medical Terminology ........................................................................................... 1
CTR209+ Judicial Procedures for Court Reporting ...................................................................................... 3
CTR211+ Judicial Internship ...................................................................................................................... 1
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CTR251AA+ Court Reporting Skill Building: Block III Literary Material ...................................................... 4
CTR251AB+ Court Reporting Skill Building: Block III Jury Charge Material ............................................... 4
CTR251AC+ Court Reporting Skill Building: Block III Question/Answer Testimony Material ...................... 6
CTR252AA+ Court Reporting Skill Building: Block IV Literary Material .................................................... 4
CTR252AB+ Court Reporting Skill Building: Block IV Jury Charge Material ............................................. 4

+ Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.
**Certificate & Degree Programs 2019-2020**

**Court Reporting Notes:**
*Students shall pass three (3) five-minute tests with 97% accuracy at each of the following speeds: 225 wpm testimony, 200 wpm jury charge, and 180 wpm literary. Students shall complete at least 40 verified hours of actual writing time during the internship experience.*

**COURT REPORTING: JUDICIAL**

**CERTIFICATE OF COMPLETION IN COURT REPORTING: JUDICIAL**

(64-66 CREDITS; CODE 5194)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Business and Information Technologies

Program Director: Stephanie Stearman

The Certificate of Completion (CCL) in Court Reporting: Judicial program prepares students for court reporting. Court reporters work for the government, courts, large business corporations, freelance reporting agencies, and television stations.

GateWay Community College is one of the few community colleges across the nation to offer a National Court Reporters Association certified court reporting program which includes realtime machine shorthand, computerized machine shorthand theory, speed development, transcription, court practice and overview in video application. Upon completion of the program, students will be qualified to enter the court reporting profession subject to any and all individual state requirements. In addition, students are assisted in preparing for the National Court Reporters Association Registered Professional Reporter (RPR) Examination and the Arizona Written Knowledge Test. Students whose personal interests and needs can be met by concentration on a core program of Court Reporting courses and who do not wish an associate in applied science may receive a certificate after completion of the courses listed.

**Program Notes:**
*Students must earn a grade of C or better for all courses within the program.*

+ Indicates course has prerequisite and/or corequisites.
++ Indicates any suffixed courses.

**General Education Requirements**

**CTR252AC+** Court Reporting Skill Building: Block IV Question/Answer Testimony Material ..........................6
**CTR253AA+** Court Reporting Skill Building: Block V Literary Material ...............................................................4
**CTR253AB+** Court Reporting Skill Building: Block V Jury Charge Material ........................................................4
**CTR253AC+** Court Reporting Skill Building: Block V Question/Answer Testimony Material ...........................6

**General Education Requirements** .................................................................................................................... 21-24

**ENG101+** First-Year Composition (3) OR
**ENG107+** First-Year Composition for ESL (3) AND
**ENG102+** First-Year Composition (3) OR
**ENG108+** First-Year Composition for ESL (3) OR
**ENG111+** Technical and Professional Writing (3) ..............................................................................................6

**COM100** Introduction to Human Communication (3) OR
**COM110** Interpersonal Communication (3) .....................................................................................................3

**CRE101+** College Critical Reading and Critical Thinking (3) OR
**Equivalent as indicated by assessment (0) ...................................................................................0-3

**MAT112+** Mathematical Concepts and Applications (3) OR
**Equivalent course or satisfactory completion of a higher level mathematics course ..........3

**Any approved general education course from the Humanities, Arts and Design area.................................2

**PSY101** Introduction to Psychology ................................................................................................................3
**BIO160** Introduction to Human Anatomy and Physiology ...........................................................................4

*Students must earn a grade of C or better for all courses within the program.*

+ Indicates course has prerequisite and/or co-requisites.
++ Indicates any module suffixed courses.
Certificate & Degree Programs 2019-2020

Admission Criteria:
1. 45 wpm typing speed based on typing test at GateWay assessment center.
2. Students must pass two timed writings of five minutes with a minimum speed of 45 wpm in order to complete this certificate.
3. ENGLISH ASSESSMENT - Placement into ENG101/ENG107 First-Year Composition on District placement exam OR permission of Department or Division.
4. Transcript(s) of high school graduation OR equivalent must be on file in the Admissions and Records Office.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 64-66
BPC101AA          Introduction to Computers I (1) OR
Demonstrated proficiency in computer usage as determined by Program Director ........... 0-1
BPC131DK+ Intermediate Word (1) OR
Demonstrated proficiency in word processing as determined by Program Director ........... 0-1
CTR101+             Court Reporting: Machine Shorthand Theory Block I ................................................. 6
CTR102+             Court Reporting: Machine Shorthand Theory Block II ............................................... 6
CTR105             Court Reporting: Punctuation and Grammar ................................................................. 1
CTR106             Court Reporting: Legal Terminology ............................................................................ 1
CTR107             Court Reporting: Medical Terminology ........................................................................ 1
CTR209+             Judicial Procedures for Court Reporting ............................................................... 3
CTR211+             Judicial Internship ...................................................................................................... 1
CTR215             Computer-Aided Transcription ...................................................................................... 3
CTR251AA+          Court Reporting Skill Building: Block III Literary Material .................................. 4
CTR251AB+          Court Reporting Skill Building: Block III Jury Charge Material ........................ 4
CTR251AC+          Court Reporting Skill Building: Block III Question/Answer Testimony Material .... 6
CTR252AA+          Court Reporting Skill Building: Block IV Literary Material .............................. 4
CTR252AB+          Court Reporting Skill Building: Block IV Jury Charge Material ........................ 4
CTR252AC+          Court Reporting Skill Building: Block IV Question/Answer Testimony Material ... 6
CTR253AA+          Court Reporting Skill Building: Block V Literary Material ............................... 4
CTR253AB+          Court Reporting Skill Building: Block V Jury Charge Material ........................... 4
CTR253AC+          Court Reporting Skill Building: Block V Question/Answer Testimony Material .... 6

Court Reporting Notes:
Students shall pass three (3) five-minute tests with 97% accuracy at each of the following speeds: 225 wpm testimony, 200 wpm jury charge, and 180 wpm literary. Students shall complete at least 40 verified hours of actual writing time during the internship experience.

COURT REPORTING: SCOPING/TRANSCRIPTION
CERTIFICATE OF COMPLETION IN COURT REPORTING – SCOPING/TRANSCRIPTION
(17-21 CREDITS; CODE 5875)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Stephanie Stearman

The Certificate of Completion (CCL) in Court Reporting: Scoping/Transcription program helps prepare students for employment as a scopist for court reporters and transcriptionists. This program will provide students with the knowledge and skill of reading machine shorthand notes and using computer-aided transcript software to work in conjunction with court reporters in editing and preparing text and transcripts. The curriculum provides instruction in realtime machine shorthand theory, use of computer-aided transcription software, and court procedures.
The second emphasis in transcription will provide students with the knowledge and skill of writing machine shorthand and using computer-aided transcript software to produce transcripts from an audio file.

Both emphases will focus on English grammar, spelling, punctuation and proofreading, medical vocabulary, basic law and word processing skills are reinforced within the program curriculum as well.

**Program Notes:**

- Students must earn a grade of C or better in all courses within the program.
- + indicates course has prerequisite and/or corequisites.

- Students must pass two timed writings of five minutes with a minimum speed of 45 wpm in order to complete this certificate.

**Admission Criteria:**

1. 45 wpm typing speed based on typing test at GateWay assessment center.
2. English Assessment - Placement into ENG101/ENG107 First-Year Composition on District placement exam OR permission of Department or Division.
3. Transcript(s) of high school graduation OR equivalent must be on file in the Admissions and Records Office.

**Program Prerequisites:** None

**Required Courses 17-21**

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<th>Course Title</th>
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<td>Introduction to Computers I (1) OR</td>
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<td>CTR101+</td>
<td>Court Reporting: Machine Shorthand Theory Block I</td>
<td>6</td>
</tr>
<tr>
<td>CTR105</td>
<td>Court Reporting: Punctuation and Grammar</td>
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<td>CTR106</td>
<td>Court Reporting: Legal Terminology</td>
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<tr>
<td>CTR107</td>
<td>Court Reporting: Medical Terminology</td>
<td>1</td>
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<tr>
<td>CTR197</td>
<td>Court Reporting Lab</td>
<td>1</td>
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<tr>
<td>CTR215+</td>
<td>Computer-Aided Transcription</td>
<td>3</td>
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<tr>
<td>CTR271+</td>
<td>Scoping</td>
<td>2</td>
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</table>

Student must select one of two (2) tracks or may select both tracks:

**Track I: Emphasis: Scoping**

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<tr>
<td>BPC/OAS131DK+</td>
<td>Intermediate Word (1) OR</td>
<td>1</td>
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<tr>
<td></td>
<td>Demonstrated proficiency in word processing</td>
<td></td>
</tr>
<tr>
<td></td>
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<tbody>
<tr>
<td>CTR209+</td>
<td>Judicial Procedures for Court Reporting</td>
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</table>

**Track II: Emphasis: Transcription**

<table>
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<tbody>
<tr>
<td>CTR272+</td>
<td>Transcription</td>
<td>2</td>
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</table>
HOMELAND SECURITY
CERTIFICATE OF COMPLETION IN HOMELAND SECURITY
(12 CREDITS; CODE 5322N)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Wyatt Johnson

The Certificate of Completion (CCL) in Homeland Security program is designed to provide students with the knowledge and skills needed to conduct a homeland security evaluation and to assess, investigate and respond to terrorism incidents. It also provides criminal justice practitioners with an opportunity for academic growth and the development of specialized skills in homeland security.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid. 
Students must earn a grade of C or better in all courses within the program.

Program Prerequisites: None

Required Courses .................................................................................................................................................... 12
AjS/DPR/FSC139 Emergency Response to Terrorism ........................................................................................3
AjS/DPR/FSC147 Emergency Preparedness ..............................................................................................................3
AjS195 International and Domestic Terrorism ..................................................................................................3
FIELD OF INTEREST: BUSINESS, ENTREPRENEURIALISM, AND MANAGEMENT

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Applied Science Degree (AAS) is recommended for students who wish to gain a depth of technical expertise by completing an occupational program that leads directly into the world of work.

- Associate in Business Degree (ABUS) is designed for students who plan to transfer to Arizona’s public universities into majors that articulate with the Associate in Business General Requirement pathway and for students who plan to complete lower division course work toward a baccalaureate program at other degree granting institutions.

- Certificate of Completion (CCL) is a program of study that is recommended for students who wish to gain technical expertise in an occupational program that requires less time and credit hours to complete than an AAS degree. Some CCLs are also included in the AAS degree program of study.

Denotes Clock Hour Program

CLOCK HOUR PROGRAMS are hands-on, industry-driven, and short-term.

- Certificate of Competency (CCT) is a program of study that is recommended for students who wish to gain expertise in a targeted area leading directly into the world of work. Such programs are offered for a specific length of time based on the total number of hours needed to complete the program.

Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

PROGRAMS
(Please click program title for detailed information.)

ACCOUNTING (AAS)
ACCOUNTING (CCL)
ADMINISTRATIVE TECHNOLOGY (AAS)
APPRENTICE MEAT CUTTER (CCT)
BUSINESS - GENERAL BUSINESS (AAS)
BUSINESS - GENERAL BUSINESS (CCL)
BUSINESS - SMALL BUSINESS MANAGEMENT (CCL)
BUSINESS TECHNOLOGY SPECIALIST (CCL)
ENTREPRENEURIAL - SMALL BUSINESS ENTREPRENEURSHIP (CCL)

TRANSFER PATHWAY PROGRAMS

MCCCD Transfer Pathway Programs were created to allow Maricopa Community College students a smooth transition into an in-state college such as ASU, NAU, or UA.

(Click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

BUSINESS (ABUS)
FIELD OF INTEREST: BUSINESS, ENTREPRENEURIALISM, AND MANAGEMENT

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Applied Science Degree (AAS) is recommended for students who wish to gain a depth of technical expertise by completing an occupational program that leads directly into the world of work.

- Associate in Business Degree (ABUS) is designed for students who plan to transfer to Arizona's public universities into majors that articulate with the Associate in Business General Requirement pathway and for students who plan to complete lower division course work toward a baccalaureate program at other degree granting institutions.

- Certificate of Completion (CCL) is a program of study that is recommended for students who wish to gain technical expertise in an occupational program that requires less time and credit hours to complete than an AAS degree. Some CCLs are also included in the AAS degree program of study.

+ Denotes Clock Hour Program

CLOCK HOUR PROGRAMS are hands-on, industry-driven, and short-term.

- Certificate of Competency (CCT) is a program of study that is recommended for students who wish to gain expertise in a targeted area leading directly into the world of work. Such programs are offered for a specific length of time based on the total number of hours needed to complete the program.

Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

PROGRAMS
(Please click program title for detailed information.)

ACCOUNTING (AAS)
ACCOUNTING (CCL)
ADMINISTRATIVE TECHNOLOGY (AAS)
APPRENTICE MEAT CUTTER (CCT)
BUSINESS - GENERAL BUSINESS (AAS)
BUSINESS - GENERAL BUSINESS (CCL)
BUSINESS - SMALL BUSINESS MANAGEMENT (CCL)
BUSINESS TECHNOLOGY SPECIALIST (CCL)
ENTREPRENEURIAL - SMALL BUSINESS ENTREPRENEURSHIP (CCL)

TRANSFER PATHWAY PROGRAMS

MCCCD Transfer Pathway Programs were created to allow Maricopa Community College students a smooth transition into an in-state college such as ASU, NAU, or UA.

(Please click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

BUSINESS (ABUS)
ACCOUNTING

ASSOCIATE IN APPLIED SCIENCE DEGREE IN ACCOUNTING
(60-65 CREDITS; CODE 3149)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Annette Torrey-Banks

The Associate in Applied Science (AAS) in Accounting program is one of several options for students seeking to gain skills and knowledge in the field of accounting. Possible entry-level jobs for this program include accounting clerk, accounts payable/receivable clerk, claims clerk, credit clerk, full-charge bookkeeper, accounting intern, or comparable positions. A Certificate of Completion (CCL) is also available.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any module suffixed courses.

Students must earn a grade of C or better in all courses required within the program.
Consultation with an Academic Advisor is recommended for course selection.

Program Prerequisites ........................................................................................................3

+ CRE101+ College Critical Reading and Critical Thinking (3) OR
++ Equivalent as indicated by assessment (0) ........................................................................0-3

Required Courses .................................................................................................................. 29-32

ACC111 Accounting Principles I (3) AND
ACC230+ Uses of Accounting Information I (3) AND
ACC240+ Uses of Accounting Information II (3) OR

ACC111 Accounting Principles I (3) AND
ACC112+ Accounting Principles II (3) AND
ACC212+ Managerial Accounting (3) OR

ACC221 Financial Accounting (3) AND
ACC212+ Managerial Accounting (3) ..................................................................................6-9

ACC105 Payroll, Sales and Property Taxes ..........................................................................3

ACC115+ Computerized Accounting ..................................................................................2

ACC121 Income Tax Preparation (3) OR
ACC221+ Tax Accounting (3) ..............................................................................................3

CIS114DE Excel Spreadsheet ..............................................................................................3

CIS105 Survey of Computer Information Systems ................................................................3

GBS151 Introduction to Business .........................................................................................3

GBS205 Legal, Ethical and Regulatory Issues in Business ....................................................3

GBS233+ Business Communication ....................................................................................3

Restricted Electives ..............................................................................................................9

ACC111 Accounting Principles I (3) AND
ACC230+ Uses of Accounting Information I (3) AND
ACC240+ Uses of Accounting Information II (3) OR

GBS110 Human Relations in Business and Industry (3) OR
MGF251 Human Relations in Business (3) ........................................................................3

GBS131 Business Calculations ............................................................................................3

To qualify, students must earn a grade of C or better in all courses within the program.

ACCOUNTING

CERTIFICATE OF COMPLETION IN ACCOUNTING
(23-26 CREDITS; CODE 5665)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Annette Torrey-Banks

The Certificate of Completion (CCL) in Accounting program is for students seeking to gain skills and knowledge in the field of accounting. Possible entry-level positions for this program include accounting clerk, accounts payable/receivable clerk, claims clerk, credit clerk, full-charge bookkeeper, accounting intern, or comparable positions. An Associate in Applied Science (AAS) is also available.

Program Notes:
+ indicates course has prerequisites and/or corequisites.
Students must earn a grade of C or better in all courses required within the program.
Consultation with an Academic Advisor is recommended for course selection.

Program Prerequisites: None

Required Courses ...............................................................................................................23-26

ACC111 Accounting Principles I (3) AND
ACC230+ Uses of Accounting Information I (3) AND
ACC240+ Uses of Accounting Information II (3) OR

ACC111 Accounting Principles I (3) AND
ACC112+ Accounting Principles II (3) AND
ACC212+ Managerial Accounting (3) OR

ACC221 Financial Accounting (3) AND
ACCOUNTING
ASSOCIATE IN APPLIED SCIENCE DEGREE IN ACCOUNTING
(66-65 CREDITS; CODE 3149)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Annette Torrey-Banks

The Associate in Applied Science (AAS) in Accounting program is one of several options for students seeking to gain skills and knowledge in the field of accounting. Possible entry-level jobs for this program include accounting clerk, accounts payable/receivable clerk, claims clerk, credit clerk, full-charge bookkeeper, accounting intern, or comparable positions. A Certificate of Completion (CCL) is also available.

Program Notes:
Students must earn a grade of C or better in all courses required within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.
Consultation with an Academic Advisor is recommended for course selection.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
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<td>Accounting Principles I (3) AND</td>
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<tr>
<td>ACC230+</td>
<td>Uses of Accounting Information I (3) AND</td>
<td>3</td>
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<td>ACC240+</td>
<td>Uses of Accounting Information II (3) AND</td>
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<tr>
<td>ACC112+</td>
<td>Accounting Principles II (3) AND</td>
<td>3</td>
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<tr>
<td>ACC211+</td>
<td>Managerial Accounting (3) AND</td>
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<tr>
<td>ACC210</td>
<td>Payroll, Sales and Property Taxes</td>
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<td>ACC115+</td>
<td>Computerized Accounting</td>
<td>2</td>
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<tr>
<td>ACC211</td>
<td>Income Tax Preparation (3) OR</td>
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<tr>
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<td>CIS114DE</td>
<td>Excel Spreadsheet</td>
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<td>CIS105</td>
<td>Survey of Computer Information Systems</td>
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</tr>
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<td>GBS151</td>
<td>Introduction to Business</td>
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<td>GBS205</td>
<td>Legal, Ethical and Regulatory Issues in Business</td>
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</tr>
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<td>Business Communication</td>
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Restricted Electives

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<td>GBS110</td>
<td>Human Relations in Business and Industry (3) OR</td>
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<td>GBS131</td>
<td>Business Calculations</td>
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Program Prerequisites

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<tbody>
<tr>
<td>CRE101+</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
<td>0-3</td>
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</table>

Students must earn a grade of C or better in each course in the Required Courses area.

Certificate of Completion (CCL)

Students must earn a grade of C or better in all courses required within the program.

ACCOUNTING
CERTIFICATE OF COMPLETION IN ACCOUNTING
(23-26 CREDITS; CODE 5665)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Annette Torrey-Banks

The Certificate of Completion (CCL) in Accounting program is for students seeking to gain skills and knowledge in the field of accounting. Possible entry-level positions for this program include accounting clerk, accounts payable/receivable clerk, claims clerk, credit clerk, full-charge bookkeeper, accounting intern, or comparable positions. An Associate in Applied Science (AAS) is also available.

Program Notes:
Students must earn a grade of C or better in all courses required within the program.
+ indicates course has prerequisites and/or corequisites.
Consultation with an Academic Advisor is recommended for course selection.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACC111</td>
<td>Accounting Principles I (3) AND</td>
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</tr>
<tr>
<td>ACC230+</td>
<td>Uses of Accounting Information I (3) AND</td>
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<tr>
<td>ACC240+</td>
<td>Uses of Accounting Information II (3) AND</td>
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<tr>
<td>ACC112+</td>
<td>Accounting Principles II (3) AND</td>
<td>3</td>
</tr>
<tr>
<td>ACC211+</td>
<td>Managerial Accounting (3) AND</td>
<td>3</td>
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<tr>
<td>ACC110</td>
<td>Accounting Principles I (3) AND</td>
<td>3</td>
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<tr>
<td>ACC240+</td>
<td>Uses of Accounting Information II (3) AND</td>
<td>3</td>
</tr>
<tr>
<td>GBS110</td>
<td>Human Relations in Business and Industry (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>MGT251</td>
<td>Human Relations in Business (3)</td>
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<tr>
<td>GBS131</td>
<td>Business Calculations</td>
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</table>

Program Prerequisites: None

Certificate of Completion (CCL)

Students must earn a grade of C or better in all courses required within the program.

Program Notes:
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.
Consultation with an Academic Advisor is recommended for course selection.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
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<td>3</td>
</tr>
<tr>
<td>ACC240+</td>
<td>Uses of Accounting Information II (3) AND</td>
<td>3</td>
</tr>
<tr>
<td>ACC112+</td>
<td>Accounting Principles II (3) AND</td>
<td>3</td>
</tr>
<tr>
<td>ACC211+</td>
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<td>3</td>
</tr>
<tr>
<td>ACC110</td>
<td>Accounting Principles I (3) AND</td>
<td>3</td>
</tr>
<tr>
<td>ACC240+</td>
<td>Uses of Accounting Information II (3) AND</td>
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<tr>
<td>GBS110</td>
<td>Human Relations in Business and Industry (3) OR</td>
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<tr>
<td>MGT251</td>
<td>Human Relations in Business (3)</td>
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<tr>
<td>GBS131</td>
<td>Business Calculations</td>
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</table>
## ADMINISTRATIVE TECHNOLOGY

**ASSOCIATE IN APPLIED SCIENCE DEGREE IN ADMINISTRATIVE TECHNOLOGY**  
(66 CREDITS; CODE 3237)

To qualify, students must earn a grade of C or better in all courses within the program.  
Division: Business and Information Technologies

Program Director: Annette Torrey-Banks

The Associate of Applied Science (AAS) Degree in Administrative Technology is designed to give a student a well-rounded preparation for a career in an office environment in the public or private sector. The degree includes a wide range of business and computer skills and applications as well as general education.

**Program Notes:**  
Students must earn a grade of C or better for all courses required within the program.  
+ indicates course has prerequisite and/or corequisites.

**Program Prerequisites:**

- Either OAS101AA or OAS103AA may be waived if 30 wpm (accuracy) assessment is achieved.
- OAS101AA: Computer Typing I: Keyboard Mastery (1) OR
- OAS103AA+: Computer Typing: Skill Building (1) ................................................................. 1

**Required Courses**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>ACC115+</td>
<td>Computerized Accounting</td>
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<tr>
<td>ACC212+</td>
<td>Managerial Accounting</td>
<td>6-9</td>
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<td>ACC105</td>
<td>Payroll, Sales and Property Taxes</td>
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<tr>
<td>ACC111+</td>
<td>Computerized Accounting</td>
<td>2</td>
</tr>
<tr>
<td>CIS114DE</td>
<td>Excel Spreadsheet</td>
<td>3</td>
</tr>
<tr>
<td>CIS105</td>
<td>Survey of Computer Information Systems</td>
<td>3</td>
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<td>GBS151</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>GBS205+</td>
<td>Legal, Ethical and Regulatory Issues in Business</td>
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**General Education Requirement**

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<tr>
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<tr>
<td>ENG101+</td>
<td>First-Year Composition (3) AND ENG102+</td>
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<tr>
<td>COM100</td>
<td>Introduction to Human Communication (3) OR</td>
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<td>CSM/TQM101</td>
<td>Quality Customer Service</td>
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**Equivalent by Assessment (0)**

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<tbody>
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<td>CIS183AH</td>
<td>Survey of Computer Information Systems</td>
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<td>OAS118</td>
<td>10-Key by Touch</td>
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**Equivalent by Assessment (0)**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GBS233+</td>
<td>Business Communication</td>
<td>3</td>
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<tr>
<td>GBS110</td>
<td>Human Relations in Business and Industry</td>
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<tr>
<td>GBS211</td>
<td>Microeconomic Principles (3)</td>
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<tr>
<td>GBS212</td>
<td>Macroeconomic Principles (3)</td>
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<tr>
<td>GBS118</td>
<td>10-Key by Touch</td>
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**Any approved general education course from the Humanities, Arts and Design area.......................... 3**

**Any approved general education course from the Natural Science area............................................ 4**

**RECIPROCAL課程**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HUM201</td>
<td>Introduction to Humanities, Arts and Design</td>
<td>3</td>
</tr>
<tr>
<td>SCI100</td>
<td>Introduction to Natural Science</td>
<td>3</td>
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**RECIPROCAL課程**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG101+</td>
<td>First-Year Composition (3) AND ENG102+</td>
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</tr>
<tr>
<td>COM100</td>
<td>Introduction to Communication (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>CSM/TQM101</td>
<td>Quality Customer Service</td>
<td>3</td>
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</table>

**Any approved general education course from the Humanities, Arts and Design area.......................... 3**

**Any approved general education course from the Natural Science area............................................ 4**

## APPRENTICE MEAT CUTTER

**CERTIFICATE OF COMPETENCY IN APPRENTICE MEAT CUTTER**

(804 CLOCK HOURS; CODE 1720)

Division: Trades & Technology – Apprentice Meat Cutter

Program Manager: R. Mark Woehl

The Certificate of Competency (CCT) for Apprentice Meat Cutter explores proper safety and maintenance of hand tools and all power equipment used in the meat cutting industry, including a variety of knives, meat saws, meat grinders, meat tenderizers and meat slicers. Identify, cut, wrap, weigh and display all retail cuts of meat for sale in a retail environment. Maintain and merchandise a retail meat case and manage inventory. Gain experience filling customer orders, break down and process a variety of meats like elk, deer, antelope and javelina, whole cattle, hogs and lamb. Perform tasks while maintaining industry safety and sanitation standards.
Certificate & Degree Programs 2019-2020

ACC121+ Managerial Accounting (3) ................................................................. 6-9
ACC110 Payroll, Sales and Property Taxes .......................................................... 3
ACC115+ Computerized Accounting ................................................................. 2
CIS114BE Excel Spreadsheet................................................................................. 3
CIS105 Survey of Computer Information Systems ................................................ 3
GSB151 Introduction to Business ......................................................................... 3
GSB205 Legal, Ethical and Regulatory Issues in Business .................................. 3

ADMINISTRATIVE TECHNOLOGY
 ASSOCIATE IN APPLIED SCIENCE DEGREE IN ADMINISTRATIVE TECHNOLOGY
(60 CREDITS; CODE 3237)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Annette Torrey-Banks

The Associate of Applied Science (AAS) Degree in Administrative Technology is designed to give a student a well-rounded preparation for a career in an office environment in the public or private sector. The degree includes a wide range of business and computer skills and applications as well as general education.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisite and/or corequisite.

Program Prerequisites ................................................................................. 1
Either OAS101AA or OAS103AA may be waived if 30 wpm (accuracy) assessment is achieved.
OAS101AA Computer Typing I: Keyboard Mastery (1) OR
OAS103AA+ Computer Typing: Skill Building (1) ................................................. 1

Required Courses ................................................................................... 33
ACC111 Accounting Principles I ........................................................................... 3
ACC115+ Computerized Accounting ................................................................. 2
BPC110 Computer Usage and Applications (3) OR
CIS105 Survey of Computer Information Systems (3) OR
CIS183AH Microsoft Office (3) OR
BPC/OAS130DK+ Beginning Word (1) AND
CIS118AB PowerPoint: Level I (1) AND
CIS117AM Database Management: Microsoft Access Level I (1) ............ 3
CIS114DE Excel Spreadsheet................................................................................. 3
BPC/OAS131DK+ Intermediate Word................................................................. 1
ECN211 Macroeconomics Principles (3) OR
ECN212 Microeconomics Principles (3) ............................................................ 3
GSB110 Human Relations in Business and Industry ............................................. 3
GSB233+ Business Communication .................................................................... 3
MGF101+ Techniques of Supervision ................................................................ 3
OAS101AB+ Computer Typing I: Letters, Tables, and Reports ........................ 1
OAS101AC+ Computer Typing II: Production and Manuscripts ..................... 1
OAS108 Business English .................................................................................. 3
OAS118 10-Key by Touch .................................................................................. 1

Restricted Electives .................................................................................... 3-8
Students should choose 3-8 credits from the following precepts to complete a minimum of 60 credits for the AAS degree. Any 100/200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

ACC++++ Any ACC Accounting course(s)
CIS++++ Any CIS Computer Information Systems course(s)
ECN++++ Any ECN Economics course(s)
EPS++++ Any EPS Entrepreneurial Studies course(s)
GSB++++ Any GBS General Business course(s)
HSM++++ Any HSM Health Service Management course(s)
IBS++++ Any IBS International Business course(s)
MGT++++ Any MGT Management course(s)
MKT++++ Any MKT Marketing course(s)
SBU++++ Any SBU Society and Business course(s)
SBS++++ Any SBS Small Business Management course(s)
TQM++++ Any TQM Total Quality Management course(s)

General Education Requirement ................................................................. 19-24
ENG101+ First-Year Composition (3) AND
ENG102+ First-Year Composition (3) .................................................................. 6
COM100 Introduction to Human Communication (3) OR
COM110 Interpersonal Communication (3) ....................................................... 3
CRE101+ College Critical Reading and Critical Thinking (3) OR
Equivalent by Assessment (0) ......................................................................... 0-3
MAT112+ Mathematical Concepts and Applications (3) OR
MAT120+ Intermediate Algebra (5) OR
MAT121+ Intermediate Algebra (4) OR
MAT122+ Intermediate Algebra (3) OR
Satisfactory completion of a higher level mathematics course. .................. 3-5
Any approved general education course from the Humanities, Arts and Design area .............................................................................. 3
Any approved general education course from the Natural Science area ................. 4

APPRENTICE MEAT CUTTER
CERTIFICATE OF COMPETENCY IN APPRENTICE MEAT CUTTER
(804 CLOCK HOURS; CODE 1720)
Division: Trades & Technology – Apprentice Meat Cutter
Program Manager: R. Mark Woehl

The Certificate of Competency (CCT) for Apprentice Meat Cutter explores proper safety and maintenance of hand tools and all power equipment used in the meat cutting industry, including a variety of knives, meat saws, meat grinders, meat tenderizers and meat slicers. Identify, cut, wrap, weigh and display all retail cuts of meat for sale in a retail environment. Maintain and merchandise a retail meat case and manage inventory. Gain experience filling customer orders. Break down and process a variety of meats like elk, deer, antelope and javelina, whole cattle, hogs and lamb. Perform tasks while maintaining industry safety and sanitation standards.
Program Notes:

Food Handlers Card is completed in class and required before working in the lab.

Admission Requirements:

Must be able to work in cold/freezing temperatures.
Must be able to stand for extended periods of time.
Must be able to work in cold/freezing temperatures.

Required Courses

<table>
<thead>
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<th>Course Name</th>
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<tbody>
<tr>
<td>GBG110</td>
<td>Human Relations in Business and Industry (3) OR</td>
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<td>MGT175</td>
<td>Business Organization and Management (3) OR</td>
<td>3</td>
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<td>MGT251</td>
<td>Human Relations in Business (3)</td>
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<tr>
<td>GBS115</td>
<td>Introduction to Business</td>
<td>3</td>
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<td>GBS205</td>
<td>Legal, Ethical and Regulatory Issues in Business</td>
<td>3</td>
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<td>GBS233+</td>
<td>Business Communication</td>
<td>3</td>
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<tr>
<td>MKT271</td>
<td>Principles of Marketing</td>
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Restricted Electives

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</table>

Students should select eighteen (18) credits from the following courses.

Program Notes:

+ indicates course has prerequisites and/or corequisites.
Students must earn a grade of C or better in all courses within the program.

Program Prerequisites: None

General Education Requirement

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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<tr>
<td>ENG101+</td>
<td>College Critical Reading and Critical Thinking (3) OR Equivalent by assessment (0)</td>
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<td>MAT120+</td>
<td>Intermediate Algebra (5) OR</td>
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<tr>
<td>MAT121+</td>
<td>Intermediate Algebra (4) OR</td>
<td>3</td>
</tr>
<tr>
<td>MAT122+</td>
<td>Intermediate Algebra (3) OR</td>
<td>3</td>
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</table>

Any approved general education course from the Humanities, Arts and Design area (3) OR

Any approved general education course from the Natural Sciences area (3) OR

SBU200 Society and Business (3) OR

Any approved general education course from the Oral Communication area (3) OR

Any approved general education course from the Natural Sciences area (3) OR
### Required Courses

<table>
<thead>
<tr>
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<td>MCP100</td>
<td>Basics of Meat Cutting</td>
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<td>MCP101</td>
<td>Intro to Meat Helper</td>
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<tr>
<td>MCP103</td>
<td>Meat Fabrication</td>
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<td>MCP104</td>
<td>Merchandising</td>
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<td>Total Program Hours:</td>
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</table>

### Program Notes:

- + indicates course has prerequisites and/or corequisites.
- Students must earn a grade of C or better in all courses required within the program.

### Program Prerequisites: None

### Restricted Electives

Students should select eighteen (18) credits from the following courses.

### General Education Requirement

Students must earn a grade of C or better in all courses used to satisfy the Required Courses area.

### Program Notes:

- Students must have a grade of C or better in all courses within the program.
- Program Notes:
  - + indicates course has prerequisites and/or corequisites.
  - ** Indicates any module suffixed courses.
## Business - Small Business Management

**Certificate of Completion in Small Business Management**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBS200</td>
<td>Small Business Operations</td>
<td>2</td>
</tr>
<tr>
<td>SBS202</td>
<td>Small Business Bookkeeping and Tax Preparation</td>
<td>1</td>
</tr>
<tr>
<td>SBS203</td>
<td>Financing and Cash Management for a Small Business</td>
<td>1</td>
</tr>
<tr>
<td>SBS204</td>
<td>Small Business Marketing and Advertising</td>
<td>2</td>
</tr>
<tr>
<td>SBS214</td>
<td>Small Business Customer Relations</td>
<td></td>
</tr>
<tr>
<td>SBS220</td>
<td>Internet Marketing for Small Business</td>
<td>2</td>
</tr>
</tbody>
</table>

**Required Courses:** None

Students should select nine (9) credits from the following courses. Any 100/200 level prefixed courses may be selected, except courses used to satisfy the Required Courses area.

- **BPC131DK+** Intermediate Word
- **CIS114DE** Excel Spreadsheet
- **CIS117DM** Microsoft Access: Database Management
- **CIS133DA** Internet/Web Development Level I
- **EPS+++** Any EPS Entrepreneurial Studies course(s)

**Program Prerequisites:** None

Students must earn a grade of C or better in all courses within the program. Program Notes: Students must earn a grade of C or better for all courses required within the program. + indicates course has prerequisite and/or corequisites.

## Business Technology Specialist

**Certificate of Completion in Business Technology Specialist**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS195</td>
<td>The Business Plan and Business Start-Up</td>
<td>2</td>
</tr>
<tr>
<td>SBS200</td>
<td>Small Business Operations</td>
<td>2</td>
</tr>
</tbody>
</table>

**Required Courses:**

- **EPS195** The Business Plan and Business Start-Up
- **SBS200** Small Business Operations

**Program Prerequisites:** None

**Program Notes:**

- Students must earn a grade of C or better for all courses within the program.
- + indicates course has prerequisite and/or corequisites.

## Entrepreneurship - Small Business Entrepreneurship

**Certificate of Completion in Small Business Entrepreneurship**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS195</td>
<td>The Business Plan and Business Start-Up</td>
<td>2</td>
</tr>
<tr>
<td>SBS200</td>
<td>Small Business Operations</td>
<td>2</td>
</tr>
</tbody>
</table>

**Required Courses:**

- **EPS195** The Business Plan and Business Start-Up
- **SBS200** Small Business Operations

**Program Prerequisites:** None

**Program Notes:**

- This program is not eligible for Title IV Federal Financial Aid.
- Students must earn a grade of C or better required for all courses within the program.
- + indicates course has prerequisite and/or corequisites.

---

*++ Indicates course has prerequisites and/or co-requisites.
**++ Indicates any module suffixed courses.*
**Certificate & Degree Programs 2019-2020**

**Small Business Management**

**Certificate of Completion in Small Business Management**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GB100</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>GBS200</td>
<td>Legal, Ethical and Regulatory Issues in Business</td>
<td>3</td>
</tr>
<tr>
<td>GB101</td>
<td>Survey of Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GB102</td>
<td>Accounting Principles I</td>
<td>3</td>
</tr>
<tr>
<td>GB103</td>
<td>Survey of Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GB104</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>GB105</td>
<td>Small Business Customer Relations</td>
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</tr>
<tr>
<td>GB106</td>
<td>Small Business Customer Relations</td>
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**Required Courses:** 12 credits

**Restricted Electives:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBS200</td>
<td>Small Business Operations</td>
<td>2</td>
</tr>
<tr>
<td>SBS201</td>
<td>Small Business Bookkeeping and Tax Preparation</td>
<td>1</td>
</tr>
<tr>
<td>SBS202</td>
<td>Financial and Cash Management for a Small Business</td>
<td>1</td>
</tr>
<tr>
<td>SBS203</td>
<td>Small Business Marketing and Advertising</td>
<td>2</td>
</tr>
<tr>
<td>SBS204</td>
<td>Internet Marketing for Small Business</td>
<td>2</td>
</tr>
</tbody>
</table>

**Entrepreneurship**

**Certificate of Completion in Small Business Entrepreneurship**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS195</td>
<td>The Business Plan and Business Start-Up</td>
<td>0.5</td>
</tr>
<tr>
<td>EPS200</td>
<td>Small Business Operations</td>
<td>2</td>
</tr>
<tr>
<td>EPS201</td>
<td>Small Business Bookkeeping and Tax Preparation</td>
<td>1</td>
</tr>
<tr>
<td>EPS202</td>
<td>Financial and Cash Management for a Small Business</td>
<td>1</td>
</tr>
<tr>
<td>EPS203</td>
<td>Small Business Marketing and Advertising</td>
<td>2</td>
</tr>
<tr>
<td>EPS204</td>
<td>Internet Marketing for Small Business</td>
<td>2</td>
</tr>
</tbody>
</table>

**Required Courses:** 9 credits

**Program Notes:**

- Students must earn a grade of C or better for all courses required within the program.
- Indicates course has prerequisites and/or corequisites.

**Certificate & Degree Programs 2019-2020**

**Business Technology Specialist**

**Certificate of Completion in Business Technology Specialist**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CIS100</td>
<td>Internet: A Tool for Learning (0.5)</td>
<td>0.5</td>
</tr>
<tr>
<td>CIS133AA</td>
<td>Internet/Web Development Level I (1)</td>
<td>0.5</td>
</tr>
<tr>
<td>CIS114DE</td>
<td>Excel Spreadsheet</td>
<td>3</td>
</tr>
<tr>
<td>CIS117DM</td>
<td>Microsoft Access: Database Management</td>
<td>3</td>
</tr>
<tr>
<td>CIS133DA</td>
<td>Internet/Web Development Level I</td>
<td>3</td>
</tr>
<tr>
<td>EPS195</td>
<td>The Business Plan and Business Start-Up</td>
<td>0.5</td>
</tr>
<tr>
<td>SBS200</td>
<td>Small Business Operations</td>
<td>2</td>
</tr>
</tbody>
</table>

**Required Courses:** 19.5-20 credits

**Program Notes:**

- Students must earn a grade of C or better for all courses required within the program.
- Indicates course has prerequisites and/or corequisites.

**Certificate & Degree Programs 2019-2020**

**Business Technology Specialist**

**Certificate of Completion in Business Technology Specialist**

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Director:** Annette Torrey-Banks

The Certificate of Completion (CCL) in Business Technology Specialist emphasizes training in word processing, spreadsheet, database, and presentation software for business purposes. Completion of this certificate program, which has as a prerequisite completion of the Office Technology Certificate, would qualify an individual for secretarial, administrative assistant, or executive assistant positions.

**Program Notes:**

- Students must earn a grade of C or better for all courses required within the program.
- Indicates course has prerequisites and/or corequisites.

**Certificate & Degree Programs 2019-2020**

**Entrepreneurship - Small Business Entrepreneurship**

**Certificate of Completion in Small Business Entrepreneurship**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS195</td>
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<td>Small Business Operations</td>
<td>2</td>
</tr>
<tr>
<td>SBS200</td>
<td>Small Business Bookkeeping and Tax Preparation</td>
<td>1</td>
</tr>
<tr>
<td>SBS201</td>
<td>Financial and Cash Management for a Small Business</td>
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</tr>
<tr>
<td>SBS202</td>
<td>Small Business Marketing and Advertising</td>
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</tr>
<tr>
<td>SBS203</td>
<td>Internet Marketing for Small Business</td>
<td>2</td>
</tr>
</tbody>
</table>

**Required Courses:** 9 credits

**Program Notes:**

- Indicates course has prerequisites and/or corequisites.
- Indicates any module suffixed course.

**Certificate & Degree Programs 2019-2020**

**Entrepreneurship - Small Business Entrepreneurship**

**Certificate of Completion in Small Business Entrepreneurship**

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Director:** Annette Torrey-Banks

The Certificate of Completion (CCL) in Small Business Entrepreneurship program prepares students to acquire the skills, tools and knowledge necessary for successful start-up and operations of a profit-making business. Emphasis is placed on evaluating potential business opportunities, developing a business plan, and practical application of small business operating principles. Students develop a foundation of business start-up strategies and practices that will enable them to prosper in the ever-changing small business environment.

**Program Notes:**

- This program is not eligible for Title IV Federal Financial Aid.
- Indicates course has prerequisites and/or corequisites.

**Certificate & Degree Programs 2019-2020**

**Entrepreneurship - Small Business Entrepreneurship**

**Certificate of Completion in Small Business Entrepreneurship**

<table>
<thead>
<tr>
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<tr>
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<td>The Business Plan and Business Start-Up</td>
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<td>2</td>
</tr>
<tr>
<td>SBS200</td>
<td>Small Business Bookkeeping and Tax Preparation</td>
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<td>SBS201</td>
<td>Financial and Cash Management for a Small Business</td>
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</tr>
<tr>
<td>SBS202</td>
<td>Small Business Marketing and Advertising</td>
<td>2</td>
</tr>
<tr>
<td>SBS203</td>
<td>Internet Marketing for Small Business</td>
<td>2</td>
</tr>
</tbody>
</table>

**Required Courses:** 9 credits

**Program Notes:**

- Indicates course has prerequisites and/or corequisites.
- Indicates any module suffixed course.
ENTREPRENEURIAL STUDIES LEVEL I
CERTIFICATE OF COMPLETION IN ENTREPRENEURIAL STUDIES LEVEL I
(10-11 CREDITS; CODE 5819N)
To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Annette Torrey-Banks

The Certificate of Completion (CCL) in Entrepreneurial Studies Level I program is designed to provide students with an introduction to the entrepreneurial process. Courses include a history of entrepreneurship, current research into its impacts on society, types of business start-up opportunities, and creating a preliminary business plan, as well as securing a healthy financial future.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
This program is not eligible for Title IV Federal Financial Aid.

Program Prerequisites: None

Required Courses
- EPS195 Business Start-Up and Planning (2) ........................................... 2
- SBS214 Small Business Customer Relations ............................................ 1
- SBS215 Managing Stress in Small Business ............................................ 1
- SBS216+ Planning for a Small Business .................................................. 2
- SBS217 Starting/Managing a Home Business .......................................... 1
- SBS218 Establishing an Import/Export Business ................................... 1
- SBS220 Internet Marketing for Small Business ....................................... 2
- SBS208AA+ Special Projects ................................................................. 1
- MGT253 Owning and Operating a Small Business ................................. 1
- GB/HEC132 Personal and Family Financial Security ............................... 3
- EPS160 New Venture Creation ............................................................... 3
- EPS150 Introduction to Entrepreneurship .............................................. 3
- EPS180 Technology Business Planning (3) OR ..................................... 2
- EPS195 Business Start-Up and Planning (2) ......................................... 2-3
- BPC110 Computer Usage and Application (3) OR ................................. 2
- CIS105 Survey of Computer Information Systems (3) ............................ 3
- GBS/HEC132 Personal and Family Financial Security ............................. 3

Restricted Electives 2
Students should select two (2) credits from any of the following courses:
- SBS214 Small Business Customer Relations ............................................ 1
- SBS215 Managing Stress in Small Business ............................................ 1
- SBS216+ Planning for a Small Business .................................................. 2
- SBS217 Starting/Managing a Home Business .......................................... 1
- SBS218 Establishing an Import/Export Business ................................... 1
- SBS220 Internet Marketing for Small Business ....................................... 2
- SBS208AA+ Special Projects ................................................................. 1
- MGT253 Owning and Operating a Small Business ................................. 1
- GB/HEC132 Personal and Family Financial Security ............................... 3

ENTREPRENEURIAL STUDIES LEVEL II
CERTIFICATE OF COMPLETION IN ENTREPRENEURIAL STUDIES LEVEL II
(18-19 CREDITS; CODE 5820)
To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Annette Torrey-Banks

The Certificate of Completion (CCL) in Entrepreneurial Studies Level II program is designed to provide students with the necessary skills, knowledge, and abilities to start and run their own business. Courses include new venture legal issues, financial projections, and alternatives, in addition to market research to determine business feasibility. Also covers management skills and entrepreneurial thinking for owning and operating a small business.

Program Notes:
Students must earn a grade of C or better for all courses within the program.

Program Prerequisites: None

Required Courses
- EPS161 New Venture Law and Finance (3) OR ......................................... 3
- EPS162 Introduction to Social Entrepreneurship (3) ............................... 3
- EPS165 New Venture Feasibility Analysis .............................................. 2
- MGT253 Owning and Operating a Small Business ................................. 3
- BPC110 Computer Usage and Application (3) OR ................................ 2
- CIS105 Survey of Computer Information Systems (3) ............................ 3
- GB/HEC132 Personal and Family Financial Security ............................... 3

MANAGEMENT - ORGANIZATIONAL LEADERSHIP
CERTIFICATE OF COMPLETION IN ORGANIZATIONAL LEADERSHIP
(18 CREDITS; CODE 5731)
To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Annette Torrey-Banks

The Certificate of Completion (CCL) in Organizational Leadership is designed to prepare students with knowledge and skills needed in today's changing workplace. The program provides leadership and communication skills and techniques for planning, organizing, leading and controlling business situations. This program also emphasizes procedures for effective resource allocation. The CCL in Organizational Leadership is fully embedded in an Associate in Applied Science (AAS) in Organizational Management.

Program Notes:
The embedded Certificate of Completion in Organizational Leadership is currently not Title IV Federal Financial Aid eligible.
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.

Program Prerequisites: None

Required Courses
- BPC110 Computer Usage and Application (3) OR ................................. 3
- CIS105 Survey of Computer Information Systems (3) ............................ 3
- BPS216 Planning for a Small Business .................................................. 2
- SBS217 Starting/Managing a Home Business .......................................... 1
- SBS218 Establishing an Import/Export Business ................................... 1
- SBS220 Internet Marketing for Small Business ....................................... 2
- SBS208AA+ Special Projects ................................................................. 1
- MGT253 Owning and Operating a Small Business ................................. 1
- GB/HEC132 Personal and Family Financial Security ............................... 3

+ indicates course has prerequisites and/or co-requisites.
** indicates any module suffixed courses.
ENTREPRENEURIAL STUDIES LEVEL I
CERTIFICATE OF COMPLETION IN ENTREPRENEURIAL STUDIES LEVEL I (10-11 CREDITS; CODE 5819N)

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Annette Torrey-Banks

The Certificate of Completion (CCL) in Entrepreneurial Studies Level I program is designed to provide students with an introduction to the entrepreneurial process. Courses include a history of entrepreneurship, current research into its impacts on society, types of business start-up opportunities, and creating a preliminary business plan, as well as securing a healthy financial future.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
This program is not eligible for Title IV Federal Financial Aid.

Program Prerequisites: None

Required Courses .............................................................. 10-11

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS195</td>
<td>Business Start-Up and Planning</td>
<td>2</td>
</tr>
<tr>
<td>SBS124</td>
<td>Small Business Customer Relations</td>
<td>1</td>
</tr>
<tr>
<td>SBS215</td>
<td>Managing Stress in Small Business</td>
<td>1</td>
</tr>
<tr>
<td>SBS216+</td>
<td>Planning for a Small Business</td>
<td>2</td>
</tr>
<tr>
<td>SBS217</td>
<td>Starting/Managing a Home Business</td>
<td>1</td>
</tr>
<tr>
<td>SBS218</td>
<td>Establishing an Import/Export Business</td>
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</tr>
<tr>
<td>SBS220</td>
<td>Internet Marketing for Small Business</td>
<td>2</td>
</tr>
<tr>
<td>SBS298AA+</td>
<td>Special Projects</td>
<td>1</td>
</tr>
<tr>
<td>MGT253</td>
<td>Owning and Operating a Small Business</td>
<td>3</td>
</tr>
</tbody>
</table>

CCL/5819N is not eligible for Title IV Federal Financial Aid.

MANAGEMENT - ORGANIZATIONAL LEADERSHIP
CERTIFICATE OF COMPLETION IN ORGANIZATIONAL LEADERSHIP (18 CREDITS; CODE 5731)

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Annette Torrey-Banks

The Certificate of Completion (CCL) in Organizational Leadership is designed to prepare students with knowledge and skills needed in today’s changing workplace. The program provides leadership and communication skills and techniques for planning, organizing, leading and controlling business situations. This program also emphasizes procedures for effective resource allocation. The CCL in Organizational Leadership is fully embedded in an Associate in Applied Science (AAS) in Organizational Management.

Program Notes:
The embedded Certificate of Completion in Organizational Leadership is currently not Title IV Federal Financial Aid eligible.
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.

Program Prerequisites: None

Required Courses .............................................................. 18

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS161</td>
<td>New Venture Law and Finance (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>EPS162</td>
<td>Introduction to Social Entrepreneurship (3)</td>
<td></td>
</tr>
<tr>
<td>EPS165</td>
<td>New Venture Feasibility Analysis</td>
<td>2</td>
</tr>
<tr>
<td>MGT253</td>
<td>Owning and Operating a Small Business</td>
<td>3</td>
</tr>
<tr>
<td>BPC110</td>
<td>Computer Usage and Application (3) OR</td>
<td></td>
</tr>
<tr>
<td>CIS105</td>
<td>Survey of Computer Information Systems (3)</td>
<td></td>
</tr>
</tbody>
</table>

CCL/5819N is not eligible for Title IV Federal Financial Aid.
**MANAGEMENT - ORGANIZATIONAL MANAGEMENT**

**ASSOCIATE IN APPLIED SCIENCE DEGREE IN ORGANIZATIONAL MANAGEMENT**

*(60-65 CREDITS; CODE 3727)*

To qualify, students must earn a grade of C or better in all courses within the program.

**Division:** Business and Information Technologies

Program Director: Annette Torrey-Banks

The Associate in Applied Science (AAS) in Organizational Management program is designed with a customized curriculum specific to the student's individual needs in addition to the knowledge and skills needed in today's changing workplace. The program provides leadership and communication skills and techniques for planning, organizing, leading, and controlling business situations. This program also emphasizes procedures for effective resource allocation. A Certificate of Completion (CCL) in Organizational Leadership is fully embedded in this AAS.

Program Notes:

1. Students must earn a grade of C or better for all courses required within the program.
2. + indicates course has prerequisites and/or corequisites.

Program Prerequisites: None

**Required Courses** ........................................................................................................................................ 18

Certificate of Completion in Organizational Leadership (S731) - Requirements listed below:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BPC110</td>
<td>Computer Usage and Applications (3) OR</td>
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</tr>
<tr>
<td>BPC110</td>
<td>Survey of Computer Information Systems (3)</td>
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</tr>
<tr>
<td>GB5110</td>
<td>Human Relations in Business and Industry (3) OR</td>
<td></td>
</tr>
<tr>
<td>MGT251</td>
<td>Human Relations in Business (3)</td>
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<tr>
<td>GB5120</td>
<td>Workplace Communication Skills</td>
<td></td>
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<tr>
<td>GB5151</td>
<td>Introduction to Business</td>
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<td>MGT175</td>
<td>Business Organization and Management (3) OR</td>
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<tr>
<td>TQM240</td>
<td>Project Management in Quality Organizations (3)</td>
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<td>MGT101</td>
<td>Techniques of Supervision (3) OR</td>
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</tr>
<tr>
<td>MGT229</td>
<td>Management and Leadership I (3)</td>
<td></td>
</tr>
</tbody>
</table>

**Restricted Electives** .......................................................................................................................... 20

Students must choose 20 industry/job related course credits from any MCCCD occupational program and/or

**MANAGEMENT - RETAIL MANAGEMENT**

**ASSOCIATE IN APPLIED SCIENCE IN RETAIL MANAGEMENT**

*(61-63 CREDITS; CODE 3048)*

To qualify, students must earn a grade of C or better in all courses within the program.

**Division:** Business and Information Technologies

Program Director: Annette Torrey-Banks

The Associate in Applied Science (AAS) in Retail Management degree is designed to prepare individuals working in the retail management, food industry, and related fields, for the mid-level management position challenges of the future. The curriculum encompasses business essentials and also emphasizes the skill sets needed for effective management and communication in the work environment. Instruction will provide the background and knowledge necessary for students to develop the judgmental skills they must exercise as business managers.

Program Notes:

1. Students must earn a grade of C or better for all courses required within the program.
2. + indicates course has prerequisites and/or corequisites.

Program Prerequisites: None

**Required Courses** ........................................................................................................................................ 24-27

Certificate of Completion in Retail Management (S732) - Requirements listed below:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ACC212</td>
<td>Managerial Accounting (3)</td>
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</tr>
<tr>
<td>ACC240</td>
<td>Uses of Accounting Information I (3) AND</td>
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</tr>
<tr>
<td>ACC240</td>
<td>Uses of Accounting Information II (3)</td>
<td></td>
</tr>
<tr>
<td>ACC111</td>
<td>Accounting Principles I (3) AND</td>
<td></td>
</tr>
<tr>
<td>ACC111</td>
<td>Accounting Principles II (3) AND</td>
<td></td>
</tr>
<tr>
<td>ACC112</td>
<td>Managerial Accounting (3)</td>
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</tr>
</tbody>
</table>

Academic Certificate.

Industry/job related course credits must include a minimum of 9 credits with a common subject or theme. Program of study must be approved by the business department chair or designee.

**General Education Requirements** ........................................................................................................... 22-27

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG101</td>
<td>First-Year Composition (3) OR</td>
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<tr>
<td>ENG107+</td>
<td>First-Year Composition for ESL (3)</td>
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<td>ENG102+</td>
<td>First-Year Composition (3) OR</td>
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<tr>
<td>ENG108+</td>
<td>First-Year Composition for ESL (3)</td>
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<tr>
<td>CRE101</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
<td></td>
</tr>
<tr>
<td>GENERAL EDUCATION REQUIREMENTS</td>
<td>Equivalent by assessment (0)</td>
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<tr>
<td>CRE101</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
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<td>GB5110</td>
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<td>MGT251</td>
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<td>GB5120</td>
<td>Workplace Communication Skills</td>
<td></td>
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<tr>
<td>GB5151</td>
<td>Introduction to Business</td>
<td></td>
</tr>
<tr>
<td>MGT175</td>
<td>Business Organization and Management (3) OR</td>
<td></td>
</tr>
<tr>
<td>TQM240</td>
<td>Project Management in Quality Organizations (3)</td>
<td></td>
</tr>
<tr>
<td>MGT101</td>
<td>Techniques of Supervision (3) OR</td>
<td></td>
</tr>
<tr>
<td>MGT229</td>
<td>Management and Leadership I (3)</td>
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</table>

Restricted Electives ................................................................................................................................. 20

Students must choose 20 industry/job related course credits from any MCCCD occupational program and/or
MANAGEMENT - ORGANIZATIONAL MANAGEMENT
ASSOCIATE IN APPLIED SCIENCE DEGREE IN ORGANIZATIONAL MANAGEMENT
(60-65 CREDITS; CODE 3727)
To qualify, students must earn a grade of C or better in all courses within the program.
Program Notes:
+ indicates course has prerequisites and/or corequisites.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 18

Certificate of Completion in Organizational Leadership (5731) - Requirements listed below:

GBS110 Human Relations in Business and Industry (3) OR
MGT251 Human Relations in Business (3) ................................................................. 3

GBS120 Workplace Communication Skills ............................................................................................... 3
GBS151 Introduction to Business ............................................................................................................... 3

MGT175 Business Organization and Management (3) OR
TQM240 Project Management in Quality Organizations (3) ................................................................. 3

MGT101 Techniques of Supervision (3) OR
MGT229 Management and Leadership I (3) ............................................................................................... 3

Students must choose 20 industry/job related course credits from any MCCCD occupational program and/or

- RETAIL MANAGEMENT
ASSOCIATE IN APPLIED SCIENCE IN RETAIL MANAGEMENT
(61-63 CREDITS; CODE 3048)
To qualify, students must earn a grade of C or better in all courses within the program.
Program Notes:
+ indicates course has prerequisites and/or corequisites.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 24-27

Certificate of Completion in Retail Management (5731) - Requirements listed below:

BPC110 Computer Usage and Applications (3) OR
CIS105 Survey of Computer Information Systems (3) ................................................................. 3

GBS110 Human Relations in Business and Industry (3) OR
MGT251 Human Relations in Business (3) ............................................................................................... 3

GBS120 Workplace Communication Skills 3
GBS151 Introduction to Business 3

MGT175 Business Organization and Management (3) OR
TQM240 Project Management in Quality Organizations (3) ................................................................. 3

MGT101 Techniques of Supervision (3) OR
MGT229 Management and Leadership I (3) ............................................................................................... 3

Restrictive Electives ........................................................................................................................................... 20

Students must choose 20 industry/job related course credits from any MCCCD occupational program and/or
Certificate & Degree Programs 2019-2020

MANAGEMENT - RETAIL MANAGEMENT
CERTIFICATE OF COMPLETION IN RETAIL MANAGEMENT (24 CREDITS; CODE 5286)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Annette Torrey-Banks

The Certificate of Completion (CCL) in Retail Management is designed to prepare individuals working in the Retail industry, and related fields, for the industry training needs in supervision and management, marketing, financial management, and business planning. The curriculum encompasses several business essentials and also emphasizes the skill sets needed for effective management and communication in the work environment.

Required Courses

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ACC111</td>
<td>Accounting Principles (3) OR</td>
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<td>ACC211</td>
<td>Financial Accounting (3)</td>
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<tr>
<td>BPC110</td>
<td>Computer Usage and Applications (3) OR</td>
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<tr>
<td>CIS105</td>
<td>Survey of Computer Information Systems (3)</td>
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<tr>
<td>GBS110</td>
<td>Human Relations in Business and Industry (3) OR</td>
</tr>
<tr>
<td>MGT251</td>
<td>Human Relations in Business (3)</td>
</tr>
<tr>
<td>MGT101</td>
<td>Techniques of Supervision (3) OR</td>
</tr>
<tr>
<td>MGT229</td>
<td>Management and Leadership I (3)</td>
</tr>
<tr>
<td>MGT179</td>
<td>Utilizing the Human Resources Department (3) OR</td>
</tr>
<tr>
<td>MGT276</td>
<td>Personnel/Human Resources Management (3)</td>
</tr>
<tr>
<td>MGT268</td>
<td>Merchandising (3) OR</td>
</tr>
<tr>
<td>MGT180</td>
<td>Retail Management (3)</td>
</tr>
<tr>
<td>MGT271</td>
<td>Principles of Marketing</td>
</tr>
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</table>

Restricted Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>Cre101</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
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<tr>
<td>ENG101</td>
<td>First-Year Composition (3) OR</td>
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<tr>
<td>ENG102</td>
<td>First-Year Composition for ESL (3) AND</td>
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<tr>
<td>Eng106</td>
<td>First-Year Composition (3) OR</td>
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<td>ENGL1</td>
<td>Technical and Professional Writing (3)</td>
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<tr>
<td>ENG102</td>
<td>Introduction to Human Communication</td>
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<tr>
<td>Sbu200</td>
<td>Society and Business</td>
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General Education Requirements

<table>
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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>GBS+--------</td>
<td>Any GBS General Business course(s) (0-12)</td>
</tr>
<tr>
<td>MGT++------</td>
<td>Any MGT Management course(s) except MGT180 (0-12)</td>
</tr>
<tr>
<td>Mkt+++-----</td>
<td>Any MKT Marketing course(s) except Mkt268 (3-15)</td>
</tr>
</tbody>
</table>

OFFICE TECHNOLOGY
CERTIFICATE OF COMPLETION IN OFFICE TECHNOLOGY (18 CREDITS; CODE 5261)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Annette Torrey-Banks

The Certificate of Completion (CCL) in Office Technology can be completed in one semester. Many classes are offered on a flexible, open entry/open exit schedule. Training in this area provides students with keyboarding, language, customer service, and computer skills. A wide variety of careers exist in the office field. Office technology positions include office assistant, receptionist, and customer service representative. The position offers opportunities to learn and advance in the office environment.

Program Notes:
Students must earn a grade of C or better in all courses required within the program.
+ indicates course has prerequisite and/or corequisites.

Program Prerequisites: None
CIS105 Survey of Computer Information Systems (3) ......................................................... 3
GBS110 Human Relations in Business and Industry (3) OR
MGT251 Human Relations in Business (3) ......................................................................... 3
MGT101 Techniques of Supervision (3) OR
MGT229 Management and Leadership I (3) ..................................................................... 3
MGT179 Utilizing the Human Resources Department (3) OR
MGT276 Personnel/Human Resources Management (3) .................................................. 3
MKT268 Merchandising (3) OR
MGT180 Retail Management (3). ....................................................................................... 3
MKT271 Principles of Marketing ......................................................................................... 3

Restricted Electives........................................................................................................... 9-15
Student must complete additional nine (9) to fifteen (15) credits from GBS, MGT, and/or MKT prefixed courses (except courses used to satisfy Required Courses area or not excluded below) to complete a minimum of 61 total program credits. Must include at least one MKT course.

GBS+++ Any GBS General Business course(s) .................................................................... 0-12
MKT+++ Any MKT Management course(s) except MKT180 .............................................. 0-12
MKT+++ Any MKT Marketing course(s) except MKT268 .................................................. 3-15

General Education Requirements.................................................................................... 22-27

ENG101+ First-Year Composition (3) OR
ENG107+ First-Year Composition for ESL (3) AND
ENG102+ First-Year Composition (3) OR
ENG108+ First-Year Composition for ESL (3) OR
ENG111+ Technical and Professional Writing (3) ................................................................ 6
ENG102 or ENG108 recommended for students pursuing a BAS degree at an Arizona university.
COM100 Introduction to Human Communication ................................................................ 3
CRE101+ College Critical Reading and Critical Thinking (3) OR Equivalent by assessment (0) ......................................................................................................................... 0-3
Any approved general education course from the Mathematics area................................. 3-5
Any approved general education course from the Humanities, Arts and Design area......... 3
SBU200 Society and Business .......................................................................................... 3
Any approved general education course from the Natural Sciences area............................ 4

Office Technology CERTIFICATE OF COMPLETION IN OFFICE TECHNOLOGY
(18 CREDITS; CODE 5261)
To qualify, students must earn a grade of C or better in all courses within the program. Division: Business and Information Technologies
Program Director: Annette Torrey-Banks

The Certificate of Completion (CCL) in Office Technology can be completed in one semester. Many classes are offered on a flexible, open entry/open exit schedule. Training in this area provides students with keyboarding, language, customer service, and computer skills. A wide variety of careers exist in the office field. Office technology positions include office assistant, receptionist, and customer service representative. The position offers opportunities to learn and advance in the office environment.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisite and/or corequisites.
Program Prerequisites: None

Required Courses............................................................................................................. 18
Either OAS101AA or OAS103AA may be waived if 30 wpm (accurately) assessment is achieved. See your advisor for course exception.

Office Technology CERTIFICATE OF COMPLETION IN OFFICE TECHNOLOGY
(18 CREDITS; CODE 5261)
To qualify, students must earn a grade of C or better in all courses within the program. Division: Business and Information Technologies
Program Director: Annette Torrey-Banks

The Certificate of Completion (CCL) in Office Technology can be completed in one semester. Many classes are offered on a flexible, open entry/open exit schedule. Training in this area provides students with keyboarding, language, customer service, and computer skills. A wide variety of careers exist in the office field. Office technology positions include office assistant, receptionist, and customer service representative. The position offers opportunities to learn and advance in the office environment.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisite and/or corequisites.
Program Prerequisites: None

Required Courses............................................................................................................. 18
Either OAS101AA or OAS103AA may be waived if 30 wpm (accurately) assessment is achieved. See your advisor for course exception.
Certificate & Degree Programs 2019-2020

BPC110  Computer Usage and Applications (3) OR
CIS105  Survey of Computer Information Systems (3) OR
CIS118AB Powerpoint: Level I (1) AND
BPC/OAS130DK+      Beginning Word (1) AND
CIS117AM  Database Management: Microsoft Access - Level I (1) ...........................................3
CIS114DE Excel Spreadsheet ........................................................................................................3
GBS110  Human Relations in Business and Industry .................................................................3
OAS108  Business English ........................................................................................................3
OAS118  Ten-Key by Touch ............................................................................................1
OAS101AA  Computer Typing I: Keyboard Mastery (1) OR
OAS103AA+  Computer Typing: Skill Building I (1) ..................................................................1
OAS101AB+  Computer Typing I: Letters, Tables and Reports ...........................................1
CSM/TQM101  Quality Customer Service ........................................................................3

FIELD OF INTEREST: COMPUTER AND INFORMATION TECHNOLOGY

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

❖ Associate in Applied Science Degree (AAS) is recommended for students who wish to gain a depth of technical expertise by completing an occupational program that leads directly into the world of work.

❖ Associate in Science Degree (AS) is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors with more stringent mathematics and mathematics-based science requirements.

❖ Certificate of Completion (CCL) is a program of study that is recommended for students who wish to gain technical expertise in an occupational program that requires less time and credit hours to complete than an AAS degree. Some CCLs are also included in the AAS degree program of study.

Denotes Clock Hour Program

CLOCK HOUR PROGRAMS are hands-on, industry-driven, and short-term.

❖ Certificate of Competency (CCT) is a program of study that is recommended for students who wish to gain expertise in a targeted area leading directly into the world of work. Such programs are offered for a specific length of time based on the total number of hours needed to complete the program.

Note: It is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

PROGRAMS

(Please click program title for detailed information.)

COMPUTER INFORMATION SYSTEMS (AAS)
COMPUTER INFORMATION SYSTEMS (CCL)
COMPUTER - INFORMATION TECHNOLOGY: NETWORK AND CYBER SECURITY (CCL)
COMPUTER - INFORMATION TECHNOLOGY: NETWORK SECURITY (AAS)
COMPUTER - LINUX PROFESSIONAL (CCL)
COMPUTER - MICROSOFT CERTIFIED INFORMATION TECHNOLOGY PROFESSIONAL (MCITP) ADMINISTRATOR (CCL)
COMPUTER - MICROSOFT NETWORKING TECHNOLOGY (AAS)
COMPUTER - MICROSOFT TECHNICAL SPECIALIST (CCL)
COMPUTER - NETWORK ADMINISTRATION: MICROSOFT WINDOWS SERVER (CCL)

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
Certificate & Degree Programs 2019-2020

FIELD OF INTEREST: COMPUTER AND INFORMATION TECHNOLOGY

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- Associate in Science Degree (AS) is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors with more stringent mathematics and mathematics-based science requirements.
- Certificate of Completion (CCL) is a program of study that is recommended for students who wish to gain technical expertise in an occupational program that requires less time and credit hours to complete than an AAS degree. Some CCLs are also included in the AAS degree program of study.

Denotes Clock Hour Program

CLOCK HOUR PROGRAMS are hands-on, industry-driven, and short-term.

- Certificate of Competency (CCT) is a program of study that is recommended for students who wish to gain expertise in a targeted area leading directly into the world of work. Such programs are offered for a specific length of time based on the total number of hours needed to complete the program.

Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

PROGRAMS
(Please click program title for detailed information.)

COMPUTER INFORMATION SYSTEMS (AAS)
COMPUTER INFORMATION SYSTEMS (CCL)
COMPUTER - INFORMATION TECHNOLOGY: NETWORK AND CYBER SECURITY (CCL)
COMPUTER - INFORMATION TECHNOLOGY: NETWORK SECURITY (AAS)
COMPUTER - LINUX PROFESSIONAL (CCL)
COMPUTER - MICROSOFT CERTIFIED INFORMATION TECHNOLOGY PROFESSIONAL (MCITP) ADMINISTRATOR (CCL)
COMPUTER - MICROSOFT NETWORKING TECHNOLOGY (AAS)
COMPUTER - MICROSOFT TECHNICAL SPECIALIST (CCL)
COMPUTER - NETWORK ADMINISTRATION: MICROSOFT WINDOWS SERVER (CCL)

BPC110 Computer Usage and Applications (3) OR
CIS105 Survey of Computer Information Systems (3) OR
CIS11AB PowerPoint: Level I (1) AND
BPC/OAS130DK+ Beginning Word (1) AND
CIS117AM Database Management: Microsoft Access - Level I (1) ................................................................................. 3
CIS114DE Excel Spreadsheet .............................................................................................................................................. 3
GBS110 Human Relations in Business and Industry .................................................................................................................. 3
OAS108 Business English ......................................................................................................................................................... 3
OAS118 Ten-Key by Touch .............................................................................................................................................. 1
OAS101AA Computer Typing I: Keyboard Mastery (1) OR
OAS103AA+ Computer Typing: Skill Building I (1) ................................................................................................................. 1
OAS101AB+ Computer Typing I: Letters, Tables and Reports ..................................................................................................... 1
CSM/TQM101 Quality Customer Service .............................................................................................................................. 3
Certificate & Degree Programs 2019-2020

COMPUTER - NETWORK AND CYBER FUNDAMENTALS (CCL)

COMPUTER - NETWORKING ADMINISTRATION: CISCO (CCL)

COMPUTER - NETWORKING TECHNOLOGY: CISCO (AAS)

COMPUTER - NETWORKING TECHNOLOGY: CISCO (CCL)

COMPUTER - NETWORK SPECIALIST (CCT)

COMPUTER - NETWORK SUPPORT TECHNICIAN (CCT)

COMPUTER - SECURITY SPECIALIST (CCT)

COMPUTER SUPPORT SPECIALIST (CCT)

TRANSFER PATHWAY PROGRAMS

MCCCD Transfer Pathway Programs were created to allow Maricopa Community College students a smooth transition into an in-state college such as ASU, NAU, or UA.

(Please click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

COMPUTER SCIENCE (AS)

Computer Information Systems

Associates in Applied Science Degree in Computer Information Systems

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Business and Information Technologies
Program Director: Brian Rice

The Associate in Applied Science (AAS) degree in Computer Information Systems program is designed to prepare students who are planning to find employment using current computer applications. Students will gain experience with a variety of operating systems, database management, and popular programming languages. A Certificate of Completion (CCL) is also available.

Program Notes:
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.
Students must earn a grade of C or better in all courses required within the program.
Consultation with an Academic Advisor is recommended for course selection.

Program Prerequisites: None

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Description</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ACC111</td>
<td>Accounting Principles I</td>
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</tr>
<tr>
<td>CIS105</td>
<td>Survey of Computer Information Systems</td>
<td>3</td>
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<tr>
<td>CIS133DA</td>
<td>Internet/Web Development Level I</td>
<td>3</td>
</tr>
<tr>
<td>CIS126DA</td>
<td>UNIX Operations System (3)</td>
<td>3</td>
</tr>
<tr>
<td>CIS126DL</td>
<td>Linux Operating System (3)</td>
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<td>MST150++/+</td>
<td>Any Microsoft Windows course (3)</td>
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<td>CIS150+</td>
<td>Programming Fundamentals (3)</td>
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<td>CIS150AB+</td>
<td>Object-Oriented Programming Fundamentals (3)</td>
<td>3</td>
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<tr>
<td>CIS159+</td>
<td>Visual Basic Programming I (3)</td>
<td>3</td>
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<td>CIS162++/+</td>
<td>Any C Programming Level I course (3)</td>
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<td>CIS163AA+</td>
<td>Java Programming: Level I (3)</td>
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<td>CIS190+</td>
<td>Introduction to Networking (3)</td>
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<td>Microsoft Networking Essentials (3)</td>
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<td>GBS151</td>
<td>Introduction to Business</td>
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<td>GBS233+</td>
<td>Business Communication</td>
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Restricted Electives

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<th>Course Description</th>
<th>Credits</th>
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<td>Any CIS Computer Information course(s) except courses used to satisfy Required Courses area</td>
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General Education Requirements

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<th>Course Description</th>
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<td>ENG107+</td>
<td>First-Year Composition for ESL (3) AND ENG102+</td>
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</tr>
<tr>
<td>ENG108+</td>
<td>First-Year Composition for ESL</td>
<td>3</td>
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</tbody>
</table>

Any general education course in the Oral Communication area...3

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
COMPUTER - NETWORK AND CYBER FUNDAMENTALS (CCL)

COMPUTER - NETWORKING ADMINISTRATION: CISCO (CCL)

COMPUTER - NETWORKING TECHNOLOGY: CISCO (AAS)

COMPUTER - NETWORKING TECHNOLOGY: CISCO (CCL)

COMPUTER - NETWORK SPECIALIST (CCT)

COMPUTER - NETWORK SUPPORT TECHNICIAN (CCT)

COMPUTER - SECURITY SPECIALIST (CCT)

COMPUTER SUPPORT SPECIALIST (CCT)

TRANSFER PATHWAY PROGRAMS

MCCCD Transfer Pathway Programs were created to allow Maricopa Community College students a smooth transition into an in-state college such as ASU, NAU, or UA.

(Please click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

COMPUTER SCIENCE (AS)

COMPUTER INFORMATION SYSTEMS

ASSOCIATE IN APPLIED SCIENCE DEGREE IN COMPUTER INFORMATION SYSTEMS

(61-67 CREDITS; CODE 3152)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Business and Information Technologies

Program Director: Brian Rice

The Associate in Applied Science (AAS) degree in Computer Information Systems program is designed to prepare students who are planning to find employment using current computer applications. Students will get experience with a variety of operating systems, database management, and popular programming languages. A Certificate of Completion (CCL) is also available.

Program Notes:

+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.

Students must earn a grade of C or better in all courses required within the program.

Consultation with an Academic Advisor is recommended for course selection.

Program Prerequisites: None

Required Courses ................................................................. 27-28

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ACC111</td>
<td>Accounting Principles I .................................. 3</td>
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<tr>
<td>CIS105</td>
<td>Survey of Computer Information Systems ............ 3</td>
</tr>
<tr>
<td>CIS133DA</td>
<td>Internet/Web Development Level I ................... 3</td>
</tr>
<tr>
<td>CIS126DA</td>
<td>UNIX Operations System (3) OR ...................... 3</td>
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<tr>
<td>CIS126DL</td>
<td>Linux Operating System (3) OR ...................... 3</td>
</tr>
<tr>
<td>MST150++/+</td>
<td>Any Microsoft Windows course (3) ................... 3</td>
</tr>
<tr>
<td>CIS150+</td>
<td>Programming Fundamentals (3) OR ................... 3</td>
</tr>
<tr>
<td>CIS150AB+</td>
<td>Object-Oriented Programming Fundamentals (3) ..... 3</td>
</tr>
<tr>
<td>CIS159+</td>
<td>Visual Basic Programming I (3) OR ................. 3</td>
</tr>
<tr>
<td>CIS162++/+</td>
<td>Any C Programming Level I course (3) OR .......... 3</td>
</tr>
<tr>
<td>CIS163AA+</td>
<td>Java Programming: Level I (3) ...................... 3</td>
</tr>
<tr>
<td>CIS190+</td>
<td>Introduction to Networking (3) OR ................ 3</td>
</tr>
<tr>
<td>CNT140AA</td>
<td>Introduction to Networks (4) OR ................... 3</td>
</tr>
<tr>
<td>MST140</td>
<td>Microsoft Networking Essentials (3) .............. 3-4</td>
</tr>
<tr>
<td>GBS151</td>
<td>Introduction to Business ................................ 3</td>
</tr>
<tr>
<td>GBS233+</td>
<td>Business Communication ................................ 3</td>
</tr>
</tbody>
</table>

Restricted Electives .......................................................... 12

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
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<tbody>
<tr>
<td>CIS++++</td>
<td>Any CIS Computer Information course(s) except courses used to satisfy Required Courses area ......................... 12</td>
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General Education Requirements ........................................ 22-27

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENG101+</td>
<td>First-Year Composition (3) OR .................... 3</td>
</tr>
<tr>
<td>ENG107+</td>
<td>First-Year Composition for ESL (3) AND .......... 3</td>
</tr>
<tr>
<td>ENG102+</td>
<td>First-Year Composition (3) OR .................... 3</td>
</tr>
<tr>
<td>ENG108+</td>
<td>First-Year Composition for ESL ................... 3</td>
</tr>
</tbody>
</table>

Any general education course in the Oral Communication area .......................................................... 3
Certificate & Degree Programs 2019-2020

COMPUTER - INFORMATION TECHNOLOGY: NETWORK AND CYBER SECURITY
CERTIFICATE OF COMPLETION IN INFORMATION TECHNOLOGY: NETWORK AND CYBER SECURITY
(42-45 CREDITS; CODE 5530)

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Wyatt Johnson

The Certificate of Completion (CCL) in Information Technology: Network and Cyber Security program is designed to focus on the necessary skills required to secure, protect and identify vulnerabilities in a network including various operating systems and network devices. Emphasis is placed on developing the theoretical, legal, ethical and practical skills needed to maintain security on mission critical networking and server systems. The program covers a variety of information security disciplines and structured languages, including but not limited to legal and ethical issues, Linux+, CCENT, Security+, and CCNA Security. An Associate in Applied Science (AAS) is also available.

Program Notes:
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed course.
Students must earn a grade of C or better in all courses within the program.
Students should select from the following courses in consultation with a Department Advisor.

Program Prerequisites: None

Required Courses .................................................................................................................................................... 42
CIS105 Survey of Computer Information Systems (3) OR
Permission of Program Director ................................................................................................................................. 0-3

Students should select from the following courses in consultation with a Department Advisor.

Restricted Electives .................................................................................................................................................... 9
except courses used to satisfy Required Courses area ........................................................................................................... 9

Certificate & Degree Programs 2019-2020

COMPUTER INFORMATION SYSTEMS
CERTIFICATE OF COMPLETION IN COMPUTER INFORMATION SYSTEMS
(21 CREDITS; CODE 5671)

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Brian Rice

The Certificate of Completion (CCL) in Computer Information Systems program is designed to meet the needs of students who are planning to find employment using current computer applications. It is intended for students who may later want to pursue an Associates Degree in Computer Information Systems, but who do not expect to go beyond the community college program. Students will get experience with a variety of operating systems, database management, and popular programming languages. An Associate in Applied Science (AAS) is also available.

Program Notes:
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed course.
Students must earn a grade of C or better in all courses required within the program.
Consultation with an Academic Advisor is recommended for course selection.

Program Prerequisites: None

Required Courses .................................................................................................................................................... 12
CIS105 Survey of Computer Information Systems ......................................................................................................... 3
CIS133DA Internet/Web Development Level I ............................................................................................................... 3
CIS126DA UNIX Operations System (3) OR
CIS126DL Linux Operating System (3) OR
MST150++ Any Microsoft Windows course (3) ........................................................................................................... 3
CIS150+ Programming Fundamentals (3) OR
CIS150AB Object-Oriented Programming Fundamentals (3) .......................................................................................... 3

Restricted Electives .................................................................................................................................................... 9
CIS++++ Any CIS Computer Information course(s) except courses used to satisfy Required Courses area ........................................................................................................... 9
### COMPUTER INFORMATION SYSTEMS

**CERTIFICATE OF COMPLETION IN COMPUTER INFORMATION SYSTEMS**

(21 CREDITS; CODE 5671)

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Brian Rice

The Certificate of Completion (CCL) in Computer Information Systems program is designed to meet the needs of students who are planning to find employment using current computer applications. It is intended for students who may later want to pursue an Associates Degree in Computer Information Systems, but who do not expect to go beyond the community college program. Students will get experience with a variety of operating systems, database management, and popular programming languages. An Associate in Applied Science (AAS) is also available.

Program Notes:
- + indicates course has prerequisites and/or co-requisites.
- ++ indicates any module suffixed courses.
- Students must earn a grade of C or better in all courses within the program.
- Consultation with an Academic Advisor is recommended for course selection.

#### Program Prerequisites: None

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS105</td>
<td>Survey of Computer Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CIS133DA</td>
<td>Internet/Web Development Level I</td>
<td>3</td>
</tr>
<tr>
<td>CIS126DA</td>
<td>UNIX Operations System (3) OR</td>
<td></td>
</tr>
<tr>
<td>CIS126DL</td>
<td>Linux Operating System (3) OR</td>
<td></td>
</tr>
<tr>
<td>MST150++</td>
<td>Any Microsoft Windows course (3)</td>
<td></td>
</tr>
<tr>
<td>CIS150+</td>
<td>Programming Fundamentals (3) OR</td>
<td></td>
</tr>
<tr>
<td>CIS150AB+</td>
<td>Object-Oriented Programming Fundamentals (3)</td>
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</tr>
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</table>

#### Restricted Electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS++++</td>
<td>Any CIS Computer Information course(s) except courses used to satisfy Required Courses area</td>
<td></td>
</tr>
</tbody>
</table>

#### Equivalent by assessment
- 0-3

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COMPUTER - INFORMATION TECHNOLOGY: NETWORK SECURITY
ASSOCIATE IN APPLIED SCIENCE DEGREE IN INFORMATION TECHNOLOGY: NETWORK SECURITY
(66-75 CREDITS; CODE 3097)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Wyatt Johnson

The Associate of Applied Science (AAS) in Information Technology: Network and Cyber Security program is designed to focus on the necessary skills required to secure, protect and identify vulnerabilities in a network including various operating systems and network devices. Emphasis is placed on developing the theoretical, legal, ethical and practical skills needed to maintain security on mission-critical networking and server systems. The program is designed to meet the training needs of government and industry employees. The program covers a variety of information technology security and structured languages. The Information Technology: Network and Cyber Security program also focuses on the skills needed for internationally recognized IT certifications and high demands in business, industry and government. A choice of two stackable Certificate of Completions (CCL) are also available in Network and Cyber Fundamentals and Network and Cyber Security.

Program Notes:
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.
Students must earn a grade of C or better in all courses within the program.
Students should select from the following courses in consultation with a Department Advisor.

Program Prerequisites ...................................................................................................................................................... 0-3
CIS105 Survey of Computer Information Systems (3) OR Permission of Program Director (0) ...................................................................................................................................................... 0-3

Required Courses .................................................................................................................................................... 38-45
Certificate of Completion (CCL) in Information Technology: Network and Cyber Security (5530) (42-45) OR
CIS126DL Linux Operating System (3) OR
CIS126RH Red Hat System Administration I (3) ........................................................................................................... 3
MST150++ Microsoft Windows (any MST 150-level suffixed course) ........................................................................... 3
CNT140AA Introduction to Networks ........................................................................................................................... 4
CNT150AA++ Cisco - Routing and Switching Essentials ......................................................................................... 4
CNT160AA+ Scaling Networks (4) OR
CNT170AA+ Cisco-Connecting Networks (4) ................................................................................................................ 4
CIS270 Essentials of Network and Information Security (3) OR
ITS110 Information Security Fundamentals (3) ........................................................................................................... 3
CIS156 Python Programming: Level I ....................................................................................................................... 3
CIS238DL Linux System Administration (3) OR
CIS238RH Red Hat System Administration II (3) .................................................................................................... 3
CNT202+ Cisco Secure Firewall Appliance Configuration .......................................................................................... 4
ITS240+ Ethical Hacking and Network Defense ........................................................................................................ 3
CNT205+ Cisco Certified Network Associate Security ............................................................................................ 4

To qualify, students must earn a grade of C or better in all courses required within the program.

Certificate of Completion (CCL) in Linux Professional program is designed to help to prepare students for a variety of industry-recognized Linux certification exams as well as provide practical hands-on skills for the work place. The program includes a core of Linux classes including Linux operating system basics, System Administration, Network Administration and Network Security. These classes will help develop a student's knowledge and skill level in preparation for employment or to improve current professional skills. Objectives for a variety of industry certifications are encompassed within course and program objectives.

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.

Program Prerequisites: None

Required Courses .................................................................................................................................................... 6
CIS126DL Linux Operating System (3) OR
CIS126RH Red Hat System Administration I (3) ........................................................................................................... 3
CIS238DL++ Linux System Administration (3) OR
CIS238RH++ Red Hat System Administration II (3) .............................................................................................. 3

Restricted Electives ................................................................................................................................................ 6
BPC170+ A+ Exam Prep: Computer Hardware Configuration and Support ................................................................ 3
BPC270+ A+ Exam Prep: Operating System Configuration and Support .................................................................... 3
CIS105 Survey of Computer Information Systems .................................................................................................... 3
CIS187+ VMware ESXI Server Enterprise ............................................................................................................... 3
CIS121AH Microsoft PowerShell/Command Line Operations .................................................................................. 3
CIS226DL+ Internet/Intranet Server Administration-Linux ...................................................................................... 3
CIS229DL+ Linux Shell Scripting ............................................................................................................................ 3
CIS240DL+ Linux Network Administration ................................................................................................................ 3
CIS270+ Essentials of Network and Information Security ...................................................................................... 3
CIS271DL+ Linux Security ........................................................................................................................................ 3
CIS190+ Introduction to Networking (3) OR
CNT140AA+ Introduction to Networks (4) OR
MST140 Microsoft Networking Essentials (3) ........................................................................................................ 3-4

CIS238DL++ Cisco - Routing and Switching Essentials ............................................................................................. 4
MST150++ Any Microsoft Windows course ............................................................................................................... 3
CIS280 Current Topics in Computing ....................................................................................................................... 3
CIS290++/+ Any Computer Information Systems Internship course ........................................................................ 1-3

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
COMPUTER - INFORMATION TECHNOLOGY: NETWORK SECURITY
ASSOCIATE IN APPLIED SCIENCE DEGREE IN INFORMATION TECHNOLOGY: NETWORK SECURITY
(66-75 CREDITS; CODE 3097)

The Associate of Applied Science (AAS) in Information Technology: Network and Cyber Security program is designed to focus on the necessary skills required to secure, protect and identify vulnerabilities in a network including various operating systems and network devices. Emphasis is placed on developing the theoretical, legal, ethical and practical skills needed to maintain security on mission-critical networking and server systems. The program is designed to meet the training needs of government and industry employees. The program covers a variety of information security technologies and structured languages. The Information Technology: Network and Cyber Security program also focuses on the skills needed for internationally recognized IT certifications and high demands in business, industry and government. A choice of two stackable Certificate of Completions (CCL) are also available in Network and Cyber Fundamentals and Network and Cyber Security.

Program Notes:
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.

Students must earn a grade of C or better in all courses within the program.

Program Prerequisites:
CIS105 Survey of Computer Information Systems (3) OR Permission of Program Director (0) .................................................. 0-3

Required Courses:
CIS126DL Linux Operating System (3) OR CNT150AA+ Cisco - Routing and Switching Essentials (4)
CIS126RH Red Hat System Administration I (3)............................................ 3
CNT170AA+ Cisco - Routing and Switching Essentials (4).......................... 4
CNT160AA+ Scaling Networks (4) OR CNT110AA+ Introduction to Networks (4).................................................. 4
CNT170AA+ Cisco-Connecting Networks (4) .................................................. 4

Certificate of Completion (CCL) in Information Technology: Network and Cyber Security (5530) (42-45) OR
CIS126DL Linux Operating System (3) OR CNT150AA+ Cisco - Routing and Switching Essentials (4)
CIS126RH Red Hat System Administration I (3)............................................ 3
CNT170AA+ Cisco - Routing and Switching Essentials (4).......................... 4
CNT160AA+ Scaling Networks (4) OR CNT110AA+ Introduction to Networks (4).................................................. 4
CNT170AA+ Cisco-Connecting Networks (4) .................................................. 4

Program Notes:
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.

Students must earn a grade of C or better in all courses within the program.

Program Prerequisites:
BPC170+ A+ Exam Prep: Computer Hardware Configuration and Support (3) OR
BPC270+ A+ Exam Prep: Operating System Configuration and Support (3)
CIS105 Survey of Computer Information Systems (3)
CIS187+ VMware ESX Server Enterprise (3)
CIS121AH Microsoft PowerShel1/Command Line Operations (3)
CIS226LA+ Internet/Intranet Server Administration-Linux (3)
CIS290+ Linux Shell Scripting (3)
CIS240DL+ Linux Network Administration (3)
CIS270+ Essentials of Network and Information Security (3)
CIS271DL+ Linux Security (3)
CIS197+ VMware ESXI Server Enterprise (3)
CIS121AH Microsoft PowerShel1/Command Line Operations (3)
CIS226LA+ Internet/Intranet Server Administration-Linux (3)
CIS290+ Linux Shell Scripting (3)
CIS240DL+ Linux Network Administration (3)
CIS270+ Essentials of Network and Information Security (3)
CIS271DL+ Linux Security (3)
CIS197+ VMware ESXI Server Enterprise (3)
CIS121AH Microsoft PowerShel1/Command Line Operations (3)
CIS226LA+ Internet/Intranet Server Administration-Linux (3)
CIS290+ Linux Shell Scripting (3)
CIS240DL+ Linux Network Administration (3)
CIS270+ Essentials of Network and Information Security (3)
CIS271DL+ Linux Security (3)

Program Notes:
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.

Students must earn a grade of C or better for all courses required within the program.

Program Prerequisites:

Required Courses:
CIS126DL Linux Operating System (3) OR
CIS126RH Red Hat System Administration I (3)............................................ 3
CIS238DL+ Linux System Administration (3) OR
CIS238RH+ Red Hat System Administration II (3)...................................... 3

Restricted Electives:
BPC170+ A+ Exam Prep: Computer Hardware Configuration and Support (3) OR
BPC270+ A+ Exam Prep: Operating System Configuration and Support (3)
CIS105 Survey of Computer Information Systems (3)
CIS187+ VMware ESX Server Enterprise (3)
CIS121AH Microsoft PowerShel1/Command Line Operations (3)
CIS226LA+ Internet/Intranet Server Administration-Linux (3)
CIS290+ Linux Shell Scripting (3)
CIS240DL+ Linux Network Administration (3)
CIS270+ Essentials of Network and Information Security (3)
CIS271DL+ Linux Security (3)
CIS197+ VMware ESXI Server Enterprise (3)
CIS121AH Microsoft PowerShel1/Command Line Operations (3)
CIS226LA+ Internet/Intranet Server Administration-Linux (3)
CIS290+ Linux Shell Scripting (3)
CIS240DL+ Linux Network Administration (3)
CIS270+ Essentials of Network and Information Security (3)
CIS271DL+ Linux Security (3)

Program Notes:
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.

Students must earn a grade of C or better for all courses required within the program.

Program Prerequisites:

Required Courses:
CIS126DL Linux Operating System (3) OR
CIS126RH Red Hat System Administration I (3)............................................ 3
CIS238DL+ Linux System Administration (3) OR
CIS238RH+ Red Hat System Administration II (3)...................................... 3

Restricted Electives:
BPC170+ A+ Exam Prep: Computer Hardware Configuration and Support (3) OR
BPC270+ A+ Exam Prep: Operating System Configuration and Support (3)
CIS105 Survey of Computer Information Systems (3)
CIS187+ VMware ESX Server Enterprise (3)
CIS121AH Microsoft PowerShel1/Command Line Operations (3)
CIS226LA+ Internet/Intranet Server Administration-Linux (3)
CIS290+ Linux Shell Scripting (3)
CIS240DL+ Linux Network Administration (3)
CIS270+ Essentials of Network and Information Security (3)
CIS271DL+ Linux Security (3)
CIS197+ VMware ESXI Server Enterprise (3)
CIS121AH Microsoft PowerShel1/Command Line Operations (3)
CIS226LA+ Internet/Intranet Server Administration-Linux (3)
CIS290+ Linux Shell Scripting (3)
CIS240DL+ Linux Network Administration (3)
CIS270+ Essentials of Network and Information Security (3)
CIS271DL+ Linux Security (3)

Program Notes:
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.

Students must earn a grade of C or better for all courses required within the program.

Program Prerequisites:

Required Courses:
CIS126DL Linux Operating System (3) OR
CIS126RH Red Hat System Administration I (3)............................................ 3
CIS238DL+ Linux System Administration (3) OR
CIS238RH+ Red Hat System Administration II (3)...................................... 3

Restricted Electives:
BPC170+ A+ Exam Prep: Computer Hardware Configuration and Support (3) OR
BPC270+ A+ Exam Prep: Operating System Configuration and Support (3)
CIS105 Survey of Computer Information Systems (3)
CIS187+ VMware ESX Server Enterprise (3)
CIS121AH Microsoft PowerShel1/Command Line Operations (3)
CIS226LA+ Internet/Intranet Server Administration-Linux (3)
CIS290+ Linux Shell Scripting (3)
CIS240DL+ Linux Network Administration (3)
CIS270+ Essentials of Network and Information Security (3)
CIS271DL+ Linux Security (3)
CIS197+ VMware ESXI Server Enterprise (3)
CIS121AH Microsoft PowerShel1/Command Line Operations (3)
CIS226LA+ Internet/Intranet Server Administration-Linux (3)
CIS290+ Linux Shell Scripting (3)
CIS240DL+ Linux Network Administration (3)
CIS270+ Essentials of Network and Information Security (3)
CIS271DL+ Linux Security (3)

Program Notes:
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.

Students must earn a grade of C or better for all courses required within the program.

Program Prerequisites:

Required Courses:
CIS126DL Linux Operating System (3) OR
CIS126RH Red Hat System Administration I (3)............................................ 3
CIS238DL+ Linux System Administration (3) OR
CIS238RH+ Red Hat System Administration II (3)...................................... 3

Restricted Electives:
BPC170+ A+ Exam Prep: Computer Hardware Configuration and Support (3) OR
BPC270+ A+ Exam Prep: Operating System Configuration and Support (3)
CIS105 Survey of Computer Information Systems (3)
CIS187+ VMware ESX Server Enterprise (3)
CIS121AH Microsoft PowerShel1/Command Line Operations (3)
CIS226LA+ Internet/Intranet Server Administration-Linux (3)
CIS290+ Linux Shell Scripting (3)
CIS240DL+ Linux Network Administration (3)
CIS270+ Essentials of Network and Information Security (3)
CIS271DL+ Linux Security (3)
CIS197+ VMware ESXI Server Enterprise (3)
CIS121AH Microsoft PowerShel1/Command Line Operations (3)
CIS226LA+ Internet/Intranet Server Administration-Linux (3)
CIS290+ Linux Shell Scripting (3)
CIS240DL+ Linux Network Administration (3)
CIS270+ Essentials of Network and Information Security (3)
CIS271DL+ Linux Security (3)

Program Notes:
+ indicates course has prerequisites and/or corequisites.
++ indicates any suffixed courses.

Students must earn a grade of C or better for all courses required within the program.

Program Prerequisites:
COMPUTER - MICROSOFT CERTIFIED INFORMATION TECHNOLOGY PROFESSIONAL (MCITP) ADMINISTRATOR

CERTIFICATE OF COMPLETION IN MICROSOFT CERTIFIED INFORMATION TECHNOLOGY PROFESSIONAL (MCITP) ADMINISTRATOR
(29-35 CREDITS; CODE 5843)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Wyatt Johnson

The Certificate of Completion (CCL) in Microsoft Certified Information Technology Professional (MCITP) Administrator program is designed to help prepare students towards an intermediate to supervisory-level position working with Windows networks. It is designed to develop the skills needed to install, configure, customize, optimize, and troubleshoot Windows servers, Windows client workstations and Microsoft Office products. The courses in the program also help to prepare for Microsoft Certified Product Specialist (MCPS), and Microsoft Certified Information Technology Professional (MCITP) examinations.

Typical tasks of a Microsoft Certified Information Technology Professional (MCITP) are developing a local area network, installing and configuring software, creating and managing user and group accounts, analyzing and optimizing system performance, troubleshooting system and printing problems, training end users, and working as a system administrator.

Program Notes:

- Students must earn a grade of C or better for all courses required within the program.
- + indicates course has prerequisites and/or corequisites.
- ++ indicates any suffixed courses.

Program Prerequisites:
- CIS105 Survey of Computer Information Systems (3) OR Permission of Department (0) .................................................. 0-3

Required Courses:
- CIS121AB Microsoft Command Line Operations (1) OR
- CIS221AB+ Microsoft Power Shell (1) .............................................. 1
- BPC170+ A+ Exam Prep: Computer Hardware Configuration and Support ............................................................ 3
- BPC270+ A+ Exam Prep: Operating System Configuration and Support ............................................................ 3
- CIS105+ Introduction to Networking (3) OR
- CNT140AA Introduction to Networks (4) OR
- MST140 Microsoft Networking Essentials (3) .............................................. 3-4
- MST150++ Any Microsoft Windows Operating System course ............................................................ 3
- MST155++/+ Any Windows Network Infrastructure course ............................................................ 3-4
- MST157++/+ Any Active Directory Windows Server Configuration course ............................................................ 3-4
- MST158++/+ Any Windows Server Administration course ............................................................ 4
- MST244+ Microsoft SQL Server Administration ............................................................ 3
- MST259+ Designing Windows Network Security ............................................................ 3

Courses selected cannot apply in both Required Courses and Restricted Electives area.

Restricted Electives:
- MST150++ Any Microsoft Windows Operating System course ............................................................ 3
- MST155++/+ Any Windows Network Infrastructure course ............................................................ 3-4
- MST157++/+ Any Active Directory Windows Server Configuration course ............................................................ 3-4
- MST158++/+ Any Windows Server Administration course ............................................................ 4
- MST259+ Designing Windows Network Security ............................................................ 3

BPC171+ Recycling Used Computer Technology (1) ............................................................ 3-4

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.

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COMPUTER - MICROSOFT CERTIFIED INFORMATION TECHNOLOGY PROFESSIONAL (MCITP) ADMINISTRATOR

CERTIFICATE OF COMPLETION IN MICROSOFT CERTIFIED INFORMATION TECHNOLOGY PROFESSIONAL (MCITP) ADMINISTRATOR
(29-35 CREDITS; CODE 5843)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Wyatt Johnson

The Certificate of Completion (CCL) in Microsoft Certified Information Technology Professional (MCITP) Administrator program is designed to help prepare students towards an intermediate to supervisory-level position working with Windows networks. It is designed to develop the skills needed to install, configure, customize, optimize, and troubleshoot Windows servers, Windows client workstations and Microsoft Office products. The courses in the program also help to prepare for Microsoft Certified Product Specialist (MCPS), and Microsoft Certified Information Technology Professional (MCITP) examinations.

Typical tasks of a Microsoft Certified Information Technology Professional (MCITP) are developing a local area network, installing and configuring software, creating and managing user and group accounts, analyzing and optimizing system performance, troubleshooting system and printing problems, training end users, and working as a system administrator.

Program Notes:
Students must earn a grade of C or better in all courses required within the program.
+ indicates course has prerequisites and/or co-requisites.
++ indicates any suffixed courses.

Program Prerequisites: ............................................................................................................................................... 0-3
CIS105 Survey of Computer Information Systems (3) OR
Permission of Department (0) ........................................................................................................................................ 0-3

Required Courses: .............................................................................................................................................. 29-32
CIS121AB Microsoft Command Line Operations (1) OR
CIS221AB Microsoft Power Shell (1) ................................................................................................................................ 1
BPC170+ A+ Exam Prep: Computer Hardware Configuration and Support ................................................................. 3
BPC270+ A+ Exam Prep: Operating System Configuration and Support ........................................................................... 3
CIS150+ Introduction to Networking (3) OR
CNT140AA Introduction to Networks (4) OR
MST140 Microsoft Networking Essentials (3) .................................................................................................................. 3-4
MST150++ Any Microsoft Windows Operating System course ........................................................................................... 3
MST155++/+ Any Windows Network Infrastructure course ................................................................................................. 3-4
MST157++/+ Any Active Directory Windows Server Configuration course ................................................................. 3-4
MST158++/+ Any Windows Server Administration course ................................................................................................. 4
MST244+ Microsoft SQL Server Administration ................................................................................................................. 3
MST259+ Designing Windows Network Security .................................................................................................................. 3

Restricted Electives: ............................................................................................................................................. 14-15
Students should select 14-15 credits from the following courses in consultation with a Program Advisor.
Selected courses will not apply in both Required Courses and Restricted Electives area.
BPC171+ Recycling Used Computer Technology (1) .................................................................................................... 1-3
(BPC171 may be repeated)

COMPUTER - MICROSOFT NETWORKING TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE IN MICROSOFT NETWORKING TECHNOLOGY
(60-67 CREDITS; CODE 3778)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Business and Information Technologies
Program Director: Wyatt Johnson

The Associate in Applied Science (AAS) in Microsoft Networking Technology program is designed to develop skills needed to implement a network infrastructure and install, configure, monitor, optimize, and troubleshoot Windows server and Windows client workstations. Courses in the program are also designed to help prepare for Microsoft Certified Product Specialist (MCPS), and Microsoft Certified Information Technology Professional (MCITP) examinations. Typical tasks of a Microsoft Certified Information Technology Professional (MCITP) are developing a local area network, installing and configuring software, creating and managing user and group accounts, analyzing and optimizing system performance, troubleshooting system and printing problems, interoperating with various operating systems, and working as a system administrator. Typical tasks of a Microsoft Certified Information Technology Professional (MCITP) are developing a local area network, installing and configuring software, creating and managing user and group accounts, analyzing and optimizing system performance, troubleshooting system and printing problems, training end users, and working as a system administrator.

Program Notes:
CIS105 is a prerequisite for many courses in the program. Students should plan to complete CIS105 early in their program of study (as one of their Restricted Electives) or obtain instructor permission for a waiver of this prerequisite.

Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or co-requisites.
++ indicates any suffixed courses.

Program Prerequisites: None. Review Program Notes for additional information.

Required Courses: .............................................................................................................................................. 24-27
Courses selected cannot apply in both Required Courses and Restricted Electives area.
CIS121AB Microsoft Command Line Operations ........................................................................................................ 1
BPC170+ A+ Exam Prep: Computer Hardware Configuration and Support ................................................................. 3
CIS102 Interpersonal and Customer Service Skills for IT Professionals .................................................................. 1
CIS126DA UNIK Operating System (3) OR
CIS126AA UNIK Operating System: Level I (1) AND
CIS126BA UNIK Operating System: Level II (1) AND
CIS126CA UNIK Operating System: Level III (1) OR
CIS126DL Linux Operating System (3) .......................................................................................................................... 3
CIS150+ Introduction to Networking (3) OR
CNT140AA Introduction to Networks (4) OR
MST140 Microsoft Networking Essentials (3) .................................................................................................................. 3-4
MST150++ Any Microsoft Windows Operating System course ........................................................................................... 3
MST155++/+ Any Windows Network Infrastructure course ................................................................................................. 3-4
MST157++/+ Any Active Directory Windows Server Configuration course ................................................................. 3-4
MST158++/+ Any Windows Server Administration course ................................................................................................. 4
MST244+ Microsoft SQL Server Administration ................................................................................................................. 3
MST259+ Designing Windows Network Security .................................................................................................................. 3

Restricted Electives: ............................................................................................................................................. 14-15
Students should select 14-15 credits from the following courses in consultation with a Program Advisor.
Selected courses will not apply in both Required Courses and Restricted Electives area.
BPC171+ Recycling Used Computer Technology (1) .................................................................................................... 1-3
(BPC171 may be repeated)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPC270+</td>
<td>Computer Maintenance It: A+ Technician Prep</td>
<td>3</td>
</tr>
<tr>
<td>CIS238++/+</td>
<td>Any UNIX/Linux System Administration course</td>
<td>3</td>
</tr>
<tr>
<td>CIS239++/+</td>
<td>Any Linux course</td>
<td></td>
</tr>
<tr>
<td>CIS240+</td>
<td>Local Area Network Planning and Design (3) OR</td>
<td></td>
</tr>
<tr>
<td>CIS240++</td>
<td>Any Linux course</td>
<td>3</td>
</tr>
<tr>
<td>CIS270+</td>
<td>Essentials of Network and Information Security</td>
<td></td>
</tr>
<tr>
<td>CIS15+</td>
<td>Any Fundamental or Level I Programming course (AND/OR)</td>
<td></td>
</tr>
<tr>
<td>CIS15+++</td>
<td>Any Fundamental or Level I Programming course (3)</td>
<td>3</td>
</tr>
<tr>
<td>CIS16+</td>
<td>Any Fundamental or Level I Programming course (3) AND/OR</td>
<td></td>
</tr>
<tr>
<td>CIS16+++</td>
<td>Any Fundamental or Level I Programming course (3)</td>
<td></td>
</tr>
<tr>
<td>CIS280+</td>
<td>Current Topics in Computing (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>CIS280++</td>
<td>Any Current Topics in Computing course(s) (1-3)</td>
<td></td>
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</tbody>
</table>

* Indicates course has prerequisites and/or corequisites.

The Certificate of Completion (CCL) in Network Administration: Microsoft Windows Server program provides students with knowledge and skills required for learning the specific tasks and industry recognized standards associated with computer networks and data communications. This program also prepares students to complete the required certification tests for Microsoft Administrator.

Program Prerequisites: None

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>MST150++/+</td>
<td>Any MST150 Microsoft Windows course</td>
<td></td>
</tr>
<tr>
<td>MST270+</td>
<td>Essentials of Network and Information Security</td>
<td></td>
</tr>
</tbody>
</table>

Program Notes:
Students must select three (3) to four (4) credits from the following courses:

+ Indicates course has prerequisites and/or corequisites.
++ Indicates any suffixed courses.

56**

The Certificate of Completion (CCL) in Microsoft Technical Specialist program provides training for an entry-level position working with Windows networks. Knowledge and skills are developed to install, configure, customize, optimize, and troubleshoot Windows servers and Windows client workstations. The courses in the program also help to prepare for Microsoft Certified Product Specialist (MCPS) and Microsoft Certified Information Technology Professional (MCTIP) examinations. The curriculum ideally is taught by Microsoft Certified Professionals.

Program Prerequisites:

<table>
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<tr>
<th>Course Code</th>
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<tbody>
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</table>

Restricted Electives

+ Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.

The Network core courses will also prepare students towards certification in Microsoft.

Program Prerequisites: None

<table>
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The Certificate of Completion (CCL) in Network Administration: Microsoft Windows Server program provides students with knowledge and skills required for learning the specific tasks and industry recognized standards associated with computer networks and data communications. This program also prepares students to complete the required certification tests for Microsoft Administrator.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
+ Indicates course has prerequisites and/or co-requisites.
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The Network core courses will also prepare students towards certification in Microsoft.

Program Prerequisites: None

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The Network core courses will also prepare students towards certification in Microsoft.

Program Prerequisites: None

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The Network core courses will also prepare students towards certification in Microsoft.
The Certificate of Completion (CCL) in Network Administration: Microsoft Windows Server program provides students with background knowledge and skills required for learning the specific tasks and industry recognized standards associated with computer networks and data communications. This program also prepares students to complete the required certification tests for Microsoft Administrator.

To qualify, students must earn a grade of C or better in all courses within the program.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
+ indicates course has prerequisites and/or co-requisites.
++ indicates any suffixed courses.

The Network core courses will also prepare students towards certification in Microsoft.

Program Prerequisites: None

Required Courses
- MST150++/+ Any Microsoft Windows Operating System course
- MST158++/+ Any Windows Server course
- MST155++/+ Any Windows Server course
- MST157++/+ Any Windows Server course

Restricted Electives
- MST150++/+ Any Microsoft Windows Operating System course
- MST158++/+ Any Windows Server course
- MST157++/+ Any Windows Server course

Students must select three (3) to four (4) credits from the following courses:
- CIS126++/+ Any Linux Operating System course(s)
- CIS197+ VMware ESXi Server Enterprise
- CIS238++/+ Any UNIX/Linux System Administration course(s)
- CNT+++++ Any CNT Cisco Network Technology course(s)

Students must select three (3) to four (4) credits from the following courses:
- MST150++/+ Any Microsoft Windows Operating System course
- MST158++/+ Any Windows Server course
- MST157++/+ Any Windows Server course

Students must select three (3) to four (4) credits from the following courses:
- MST150++/+ Any Microsoft Windows Operating System course
- MST158++/+ Any Windows Server course
- MST157++/+ Any Windows Server course

Computer - Network Administration: Microsoft Windows Server

Certificate of Completion in Network Administration: Microsoft Windows Server (18-19 credits; code 5124)

To qualify, students must earn a grade of C or better in all courses within the program.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
+ indicates course has prerequisites and/or co-requisites.
++ indicates any suffixed courses.

The Network core courses will also prepare students towards certification in Microsoft.
### COMPUTER - NETWORK AND CYBER FUNDAMENTALS

**Certificate of Completion in Network and Cyber Fundamentals**  
(17 CREDITS; CODE 5908)

To qualify, students must earn a grade of C or better in all courses within the program.  
**Division:** Business and Information Technologies  
**Program Director:** Wyatt Johnson

The Certificate of Completion (CCL) in Network and Cyber Fundamentals program is designed to focus on the necessary skills required to design and secure a network including the security of various systems and network devices. Emphasis is placed on developing the theoretical and practical skills needed to maintain security on mission-critical networking and server systems. The program is designed to meet the training needs of government and industry employees. The program covers a variety of essential security disciplines. The Network and Cyber Fundamentals program also focuses on the skills needed for internationally recognized IT certifications and high demands in business, industry and government. An Associate in Applied Science (AAS) is also available in this area.

**Program Notes:**
- + indicates course has prerequisites and/or co-requisites.  
- ++ indicates any suffixed courses.  
- Students must earn a grade of C or better in all courses within the program.  
- Students should select from the following courses in consultation with a department advisor.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CNT110A*</td>
<td>Introduction to Networking Principles</td>
<td>4</td>
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<tr>
<td>CNT110A**</td>
<td>Networking Fundamentals</td>
<td>4</td>
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<tr>
<td>CNT110A***</td>
<td>Designing a Network</td>
<td>4</td>
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<tr>
<td>CNT110A****</td>
<td>Implementing a Network</td>
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<td>CNT110A*****</td>
<td>Administering a Network</td>
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<td>CNT110A******</td>
<td>Maintaining a Network</td>
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<td>CNT110A*******</td>
<td>Troubleshooting a Network</td>
<td>4</td>
</tr>
<tr>
<td>CNT110A********</td>
<td>Securing a Network</td>
<td>4</td>
</tr>
<tr>
<td>CNT110A*******</td>
<td>Elevating a Network to the Next Generation</td>
<td>4</td>
</tr>
</tbody>
</table>

**Program Prerequisites:** None

---

### COMPUTER - NETWORK SUPPORT TECHNICIAN

**Certificate of Competency in Network Support Technician**  
(640 C钟 Hours; CODE 1167)

**Division:** Trades & Technology - Computer Support  
**Program Manager:** R. Mark Woehl

The Certificate of Competency (CCT) for Network Support Technician explores and studies multiple facets of IT networking. Build skills in various networking hardware and software, protocols and devices. Learn concepts needed to better understand various aspects of network functionality and troubleshooting. Utilize skills learned to prepare for the CompTIA Network+ certification.

**Program Notes:**
- Standards aligned to CompTIA Network+ certification exam.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNP215</td>
<td>315</td>
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<tr>
<td>CNP225</td>
<td>168</td>
</tr>
<tr>
<td>CNP230</td>
<td>157</td>
</tr>
</tbody>
</table>

**Total Program Hours:** 640

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### COMPUTER - NETWORKING ADMINISTRATION: CISCO

**Certificate of Completion in Networking Administration: Cisco**  
(16 CREDITS; CODE 5969)

**Division:** Business and Information Technologies  
**Program Director:** Wyatt Johnson

The Certificate of Completion (CCL) in Networking Administration: Cisco provides training for a position working with Cisco Systems networking and Internet hardware. A Cisco Systems recognized Regional or Local Academy prepares students for industry-recognized certification. The curriculum is taught by Cisco Systems Certified Professionals. Knowledge and skills are developed to install, configure, maintain, and troubleshoot Cisco routers and components, advanced routing protocols, Local Area Networks (LANs), and Wide Area Networks (WANs). The courses in the program also prepare students for the Cisco Certified Networking Associate examination.

**Program Notes:**
- + indicates course has prerequisite and/or co-requisites.  
- Students must earn a grade of C or better for all courses required within the program.

<table>
<thead>
<tr>
<th>Required Courses</th>
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<tbody>
<tr>
<td>CNP110A</td>
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</tbody>
</table>

**Total Program Hours:** 1252

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### COMPUTER - NETWORK SPECIALIST

**Certificate of Competency in Network Specialist**  
(1252 Clock Hours; Code 1168-Day/1169-Night)

**Division:** Trades & Technology - Computer Support  
**Program Manager:** R. Mark Woehl

The Certificate of Competency (CCT) for the Network Specialist program prepares the students for both portions of the CompTIA A+ exam. In addition, the program also prepares students to sit for the CompTIA Network+ certification exam.

**Program Notes:**
- + indicates course has prerequisite and/or co-requisites.  
- ++ indicates any suffixed courses.  
- Students must earn a grade of C or better in all courses within the program.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Clock Hours</th>
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<tbody>
<tr>
<td>OSP116</td>
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<tr>
<td>CNP104</td>
<td>216</td>
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<tr>
<td>CNP205</td>
<td>192</td>
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<td>CNP210</td>
<td>180</td>
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<td>CNP215</td>
<td>315</td>
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<tr>
<td>CNP225</td>
<td>168</td>
</tr>
<tr>
<td>CNP230</td>
<td>157</td>
</tr>
</tbody>
</table>

**Total Program Hours:** 1252

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**COMPUTER - NETWORK AND CYBER FUNDAMENTALS**

**CERTIFICATE OF COMPLETION IN NETWORK AND CYBER FUNDAMENTALS**  
(17 CREDITS; CODE 59081)

To qualify, students must earn a grade of C or better in all courses within the program.  
Division: Business and Information Technologies  
Program Director: Wyatt Johnson

The Certificate ofCompletion (CCL) in Network and Cyber Fundamentals program is designed to focus on the necessary skills required to design and secure a network including the security of various systems and network devices. Emphasis is placed on developing the theoretical and practical skills needed to maintain security on mission-critical networking and server systems. The program is designed to meet the training needs of government and industry employees. The program covers a variety of essential security disciplines. The Network and Cyber Fundamentals program also focuses on the skills needed for internationally recognized IT certifications and high demands in business, industry and government. An Associate in Applied Science (AAS) is also available in this area.

**Program Notes:**  
+ indicates course has prerequisites and/or corequisites.  
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Students must earn a grade of C or better in all courses within the program.  
Students should select from the following courses in consultation with a department advisor.

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<tr>
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<tbody>
<tr>
<td>CNP104</td>
<td>Windows Operating System and PC Hardware</td>
<td>168</td>
</tr>
<tr>
<td>CNP215</td>
<td>Networking Basics</td>
<td>315</td>
</tr>
<tr>
<td>CNP220</td>
<td>Networking Technologies</td>
<td>168</td>
</tr>
<tr>
<td>CNP225</td>
<td>Network Troubleshooting</td>
<td>157</td>
</tr>
<tr>
<td>Total</td>
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<td>640</td>
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</tbody>
</table>

**COMPUTER - NETWORK SUPPORT TECHNICIAN**

**CERTIFICATE OF COMPETENCY IN NETWORK SUPPORT TECHNICIAN**  
(640 CLOCK HOURS; CODE 1167)

Division: Trades & Technology - Computer Support  
Program Manager: R. Mark Woehl

The Certificate of Competency (CCT) for Network Support Technician explores and studies multiple facets of IT networking. Build skills in various networking hardware and software, protocols and devices. Learn concepts needed to better understand various aspects of network functionality and troubleshooting. Utilize skills learned to prepare for the CompTIA Network+ certification.

**Program Notes:**  
Standards aligned to CompTIA Network+ certification exam.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Clock Hours</th>
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</thead>
<tbody>
<tr>
<td>CNP215</td>
<td>Networking Basics</td>
<td>315</td>
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<td>CNP225</td>
<td>Network Troubleshooting</td>
<td>168</td>
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<td>CNP220</td>
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<td>157</td>
</tr>
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<td>Total</td>
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**COMPUTER - NETWORKING ADMINISTRATION: CISCO**

**CERTIFICATE OF COMPLETION IN NETWORKING ADMINISTRATION: CISCO**  
(16 CREDITS; CODE 5969)

To qualify, students must earn a grade of C or better in all courses within the program.  
Division: Business and Information Technologies  
Program Director: Wyatt Johnson

The Certificate ofCompletion (CCL) in Networking Administration: Cisco provides training for a position working with Cisco Systems networking and Internet hardware. A Cisco Systems recognized Regional or Local Academy prepares students for industry-recognized certification. The curriculum is taught by Cisco Systems Certified Professionals. Knowledge and skills are developed to install, configure, maintain, and troubleshoot Cisco routers and devices, advanced routing protocols, Local Area Networks (LANs), and Wide Area Networks (WANs). The courses in the program also prepare students for the Cisco Certified Networking Associate examination.

**Program Notes:**  
+ indicates course has prerequisite and/or corequisites.  
Students must earn a grade of C or better for all courses required within the program.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Clock Hours</th>
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<tbody>
<tr>
<td>CNP215</td>
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<td>315</td>
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<td>CNP225</td>
<td>Network Troubleshooting</td>
<td>168</td>
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<tr>
<td>CNP220</td>
<td>Network Troubleshooting</td>
<td>157</td>
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<tr>
<td>Total</td>
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</table>
## COMPUTER - NETWORKING TECHNOLOGY: CISCO
### ASSOCIATE IN APPLIED SCIENCE DEGREE IN NETWORKING TECHNOLOGY: CISCO
(60-63 CREDITS; CODE 3816)

To qualify, students must earn a grade of C or better in all courses within the program.

**Division: Business and Information Technologies**

**Program Director:** Wyatt Johnson

The Associate in Applied Science (AAS) in Networking Technology: Cisco provides training for a supervisory position working with Cisco Systems networking and Internet hardware. A Cisco Systems recognized Regional or Local Academy, prepares students for industry-recognized certification. The curriculum is taught by Cisco Systems Certified Professionals. Knowledge and skills are developed to install, configure, maintain, and troubleshoot Cisco routers and components, advanced routing protocols, Local Area Networks (LANs), and Wide Area Networks (WANs); troubleshoot problems with various common hardware and software configurations; perform administrative tasks in a network; develop methods for customer service. Courses in the program also prepare students for the Cisco Certified Networking Associate examination.

**Job Description:** A Cisco networking Administrator will be required to perform various tasks such as designing, installing, maintaining and troubleshooting Cisco routers and components, Local Area Networks (LANs), and Wide Area Networks (WANs); additional skills that are necessary include troubleshooting problems with various common hardware and software configurations, performing administrative tasks in a network, developing methods for customer service, and utilizing electronic systems.

**Job Opportunities:** Cisco systems is the world’s largest manufacturer of networking and Internet hardware and has experienced tremendous growth of market share. The employment opportunities for trained Networking Administrators are outstanding.

**Program Notes:**
- Students must earn a grade of C or better for each course listed in the Required Courses area.
- + indicates course has prerequisite and/or corequisites.
- ++ indicates any module suffixed courses.
- A course cannot be used to satisfy both the Required Course and Restricted Electives Area.

### Program Prerequisites: None

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
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<td>Introduction to Networks</td>
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<tr>
<td>CNT150AA+</td>
<td>Microsoft Windows (any course) (3)</td>
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<tr>
<td>CNT160AA+</td>
<td>Scaling Networks</td>
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<tr>
<td>CNT170AA+</td>
<td>Cisco - Connecting Networks</td>
<td>4</td>
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<tr>
<td>CNT300AA+</td>
<td>Cisco - Routing and Switching Essentials</td>
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<td>CIS105+</td>
<td>UNIX/Linux Operating System (any course) (3)</td>
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<td>MST150++</td>
<td>Microsoft Windows (any course) (3)</td>
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<td>Any Active Directory Windows Server Configuration course</td>
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<td>MST250+</td>
<td>Management of Information Systems</td>
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<td>MST280+</td>
<td>Current Topics in Computing</td>
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<tr>
<td>MST290+++</td>
<td>Any Computer Information Systems Internship course(s)</td>
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<td>MST350+</td>
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<td>MST370L++</td>
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<tr>
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#### Restricted Electives

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BPC110+</td>
<td>Computer Usage and Applications (3)</td>
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</tr>
<tr>
<td>CIS126+++</td>
<td>Any UNIX/Linux Operating System course (3)</td>
<td>3</td>
</tr>
<tr>
<td>MST150+++</td>
<td>Any Microsoft Windows Operating System course (3)</td>
<td>3</td>
</tr>
<tr>
<td>CIS190+</td>
<td>Introduction to Networking (3)</td>
<td>3</td>
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</tbody>
</table>
## COMPUTER - NETWORKING TECHNOLOGY: CISCO

**Certificate & Degree Program 2019-2020**

**ASSOCIATE IN APPLIED SCIENCE DEGREE IN NETWORKING TECHNOLOGY: CISCO**  
(60-63 CREDITS; CODE: 3816)

To qualify, students must earn a grade of C or better in all courses within the program.

**Division:** Business and Information Technologies

**Program Director:** Wyatt Johnson

### The Associate in Applied Science (AAS) in Networking Technology: Cisco provides training for a supervisory position working with Cisco Systems networking and Internet hardware. A Cisco Systems recognized Regional or Local Academy, prepares students for industry-recognized certification. The curriculum is taught by Cisco Systems Certified Professionals. Knowledge and skills are developed to install, configure, maintain, and troubleshoot Cisco routers and components, advanced routing protocols, Local Area Networks (LANs), and Wide Area Networks (WANs); troubleshoot problems with various common hardware and software configurations; perform administrative tasks in a network; develop methods for customer service. Courses in the program also prepare students for the Cisco Certified Networking Associate examination.

**Job Description:** A Cisco networking Administrator will be required to perform various tasks such as designing, installing, maintaining and troubleshooting Cisco routers and components, Local Area Networks (LANs), and Wide Area Networks (WANs). Additional skills that are necessary include troubleshooting problems with various common hardware and software configurations, performing administrative tasks in a network, developing methods for customer service, and utilizing electronic systems.

**Job Opportunities:** Cisco systems is the world's largest manufacturer of networking and Internet hardware and has tremendous growth of market share. The employment opportunities for trained Networking Administrators are outstanding.

**Program Notes:**

Students must earn a grade of C or better for each course listed in the Required Courses area.

+ indicates course has prerequisite and/or corequisites.

++ indicates any module suffixed courses.

A course cannot be used to satisfy both the Required Course and Restricted Electives Area.

### Program Prerequisites: None

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td><strong>BPC170+</strong> A+ Exam Prep: Computer Hardware Configuration and Support</td>
<td>3</td>
</tr>
<tr>
<td><strong>CIS126++</strong> UNIX/Linux Operating System (any course) (3) OR <strong>MST150++</strong> Microsoft Windows (any course) (3)</td>
<td>3</td>
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<tr>
<td><strong>CNT140AA</strong> Introduction to Networks</td>
<td>4</td>
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<tr>
<td><strong>CNT150AA++</strong> Cisco - Routing and Switching Essentials</td>
<td>4</td>
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<tr>
<td><strong>CNT160AA</strong> Scaling Networks</td>
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<tr>
<td><strong>CNT170AA</strong> Cisco - Connecting Networks</td>
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</table>

**Total Required Courses: 22 credits**

<table>
<thead>
<tr>
<th>Restricted Electives</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>BPC110</strong> Computer Usage and Applications (3) OR <strong>CIS105</strong> Survey of Computer Information Systems (3)</td>
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<tr>
<td><strong>CIS126++</strong> Any UNIX/Linux Operating System course (3) OR <strong>MST150++</strong> Any Microsoft Windows Operating System course (3)</td>
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<tr>
<td><strong>CIS190+</strong> Introduction to Networking (3) OR</td>
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</table>

**Total Restricted Electives: 16 credits**

Students must complete sixteen (16) credits from any of the following courses. Courses cannot be shared with Required Courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tr>
<td><strong>BPC110</strong></td>
<td>Computer Usage and Applications (3) OR <strong>CIS105</strong> Survey of Computer Information Systems (3)</td>
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<tr>
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<td>Any UNIX/Linux Operating System course (3) OR <strong>MST150++</strong> Any Microsoft Windows Operating System course (3)</td>
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<tr>
<td><strong>CIS190+</strong></td>
<td>Introduction to Networking (3) OR</td>
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<tr>
<td><strong>MS1140</strong></td>
<td>Microsoft Networking Essentials (3)</td>
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<tr>
<td><strong>CIS270+</strong></td>
<td>Essentials of Network and Information Security</td>
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<td><strong>CIS271DB+</strong></td>
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<td><strong>CIS272DB+</strong></td>
<td>Information Security Principles</td>
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<td><strong>CPD104</strong></td>
<td>Career and Personal Development</td>
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<td><strong>PPT120</strong></td>
<td>Energy Industry Fundamentals</td>
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<td><strong>CIS274DA++</strong></td>
<td>Introduction to Power Systems Security</td>
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<tr>
<td><strong>CIS275DA++</strong></td>
<td>Generation and Transmission Systems Security</td>
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<tr>
<td><strong>CIS275DB+</strong></td>
<td>Smart Grid and Distribution System Security</td>
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<td><strong>CIS275DC+</strong></td>
<td>Embedded Systems Security</td>
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<td><strong>CIS296+++</strong></td>
<td>Any Cooperative Education course(s) 1-4 OR</td>
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<td>Any Special Projects course(s) 1-3</td>
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<tr>
<td><strong>CIS121AB</strong></td>
<td>Microsoft Command Line Operations</td>
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<td><strong>CIS121AH</strong></td>
<td>Microsoft PowerShell/Command Line Operations</td>
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<tr>
<td><strong>CIS102</strong></td>
<td>Interpersonal and Customer Service Skills for IT Professionals</td>
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<td><strong>CIS121A</strong></td>
<td>Customer User Support</td>
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<td><strong>CIS111</strong></td>
<td>Ethics in Information Technology</td>
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<td><strong>ELT100</strong></td>
<td>Survey of Electronics</td>
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<td><strong>CIS224</strong></td>
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<td><strong>CNT205++</strong></td>
<td>Cisco Certified Network Associate Security</td>
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<td><strong>CNT181+</strong></td>
<td>Cisco Securing IOS Networks</td>
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<td><strong>CNT202+</strong></td>
<td>Cisco Secure Firewall Appliance Configuration</td>
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<td><strong>CNT185+</strong></td>
<td>Cisco Network Security</td>
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<td><strong>CNT206+</strong></td>
<td>Cisco Certified Network Associate Wireless</td>
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<td><strong>CNT2600+++</strong></td>
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<td><strong>BPC270+</strong></td>
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<td><strong>CIS238DL+</strong></td>
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<td>Linux Shell Scripting</td>
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<tr>
<td><strong>CIS271DL+</strong></td>
<td>Linux Security</td>
<td>3</td>
</tr>
<tr>
<td><strong>CIS275DL+</strong></td>
<td>Linux Capstone</td>
<td>3</td>
</tr>
<tr>
<td><strong>MST155++/+</strong></td>
<td>Any Windows Network Infrastructure course</td>
<td>3-4</td>
</tr>
<tr>
<td><strong>MST157++/+</strong></td>
<td>Any Active Directory Windows Server Configuration course</td>
<td>3-4</td>
</tr>
<tr>
<td><strong>MST158++/+</strong></td>
<td>Any Windows Server Administration course</td>
<td>4</td>
</tr>
<tr>
<td><strong>CIS250+</strong></td>
<td>Management of Information Systems</td>
<td>3</td>
</tr>
<tr>
<td><strong>CIS280</strong></td>
<td>Current Topics in Computing</td>
<td>3</td>
</tr>
<tr>
<td><strong>CIS390+++</strong></td>
<td>Any Computer Information Systems Internship course(s)</td>
<td>1-3</td>
</tr>
<tr>
<td><strong>ITS240+</strong></td>
<td>Ethical Hacking and Network Defense</td>
<td>3</td>
</tr>
<tr>
<td><strong>CIS197+</strong></td>
<td>VMware ESXi Server Enterprise</td>
<td>3</td>
</tr>
<tr>
<td><strong>ENG111+</strong></td>
<td>Technical and Professional Writing</td>
<td>6</td>
</tr>
</tbody>
</table>

Any approved general education course from the Communication area

**Total Credits: 60-63 credits**

### General Education Requirement

**Total General Education Requirement: 22-25 credits**

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**APPENDIX**

**Certificate & Degree Program 2019-2020**

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**APPENDIX**

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Certificate & Degree Program 2019-2020

MULTIVIDEO PLAYLISTS:  (1224)  (792)

Certificate & Degree Programs 2019-2020

+ Indicates course has prerequisites ...

+ Indicates course has prerequisites and/or co-requisites.

++ Indicates any module suffixed courses.

Professionals using the Cisco Networking Academy program curriculum.

Area Networks (LANs), and Wide Area Networks (WANs); troubleshoot problems with various hardware and software

The Certificate of Completion (CCL) in Networking Technology: Cisco provides training for those interested in supervisory

Program Director: Wyatt Johnson

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Business and Information Technologies

(22 CREDITS; CODE 5967)

CERTIFICATE OF COMPLETION IN NETWORKING TECHNOLOGY: CISCO

Program Notes:

Any approved general education course from the Natural Sciences area ...........................................3

Any approved general education course from the Social-Behavioral Sciences area .................................3

Any approved general education course from the Humanities, Arts and Design area .................................3

Any approved general education course from the Mathematics area ..................................................................3

CRE101+ College Critical Reading and Critical Thinking (3) OR

Any approved general education course from the Humanities, Arts and Design area .................................3

Any approved general education course from the Mathematics area ..................................................................3

Any approved general education course from the Social-Behavioral Sciences area .................................3

Any approved general education course from the Natural Sciences area ...........................................4

Program Notes:

Students must earn a grade of C or better for all courses required within the program.

Program Prerequisites: None

Required Courses .................................................................................................................................................... 22

BPC170+ A+ Exam Prep: Computer Hardware Configuration and Support ......................................................3

CIS126++/+ Any UNIX/Linux Operating System course(s) (1-3) OR

MST150++/+ Any Microsoft Windows Operating System course (3) .................................................................3

CNT140AA+ Introduction to Networks ..................................................................................................................4

CNT150AA+ Cisco - Routing and Switching Essentials ............................................................................................4

CNT160AA+ Scaling Networks .................................................................................................................................4

CNT170AA+ Cisco - Connecting Networks .............................................................................................................4

The Certificate of Completion (CCL) in Networking Technology: Cisco provides training for those interested in supervisory responsibilities working with Cisco Systems networking and Internet hardware. Knowledge and skills are developed to install, configure, maintain, and troubleshoot Cisco routers and switches; configure advanced routing protocols, Local Area Networks (LANs), and Wide Area Networks (WANs); troubleshoot problems with various hardware and software configurations and perform administrative tasks in a network. The courses in the program are also designed to help prepare students for the Cisco Certified Networking Associate (CCNA) examination and are taught by Cisco Certified Professionals using the Cisco Networking Academy program curriculum.

Program Notes:

Students must earn a grade of C or better for all courses required within the program.

+ indicates course has prerequisite and/or corequisites.

Required Courses Clock Hours

CNP250 Information Security ...............................................................................................................................400

Total Program Hours: ............................................................................................................................................ 400

COMPUTER - SECURITY SPECIALIST  ☀

CERTIFICATE OF COMPETENCY IN SECURITY SPECIALIST

(612 CLOCK HOURS; CODE 1163–NIGHT)

Division: Trades & Technology – Computer Support

Program Manager: R. Mark Woehl

The Certificate of Competency (CCT) for Security Specialist introduces the information security field. Explore various hardware and software utilized. Identify threats and troubleshooting techniques needed in security. Learn skills needed to prepare for the CompTIA Security+ certification.

Program Notes:

Standards aligned to CompTIA Security+ certification exam.

Program Prerequisites: CompTIA Network+ certification or applicable IT field experience.

Required Courses Clock Hours

ISP116 Computer Foundations .............................................................................................................................24

CNP104 Windows Operating System and PC Hardware ......................................................................................216

CNP205 Introduction to Network Concepts ......................................................................................................... 192

CNP210 Computer Maintenance and Troubleshooting ..................................................................................... 180

Total Program Hours: ............................................................................................................................................ 612

COMPUTER - NETWORKING TECHNOLOGY: CISCO

CERTIFICATE OF COMPLETION IN NETWORKING TECHNOLOGY: CISCO

(22 CREDITS; CODE 5967)

Division: Business and Information Technologies

Program Director: Wyatt Johnson

Program Notes:

Students must earn a grade of C or better for all courses required within the program.

Program Prerequisites: None

Required Courses Clock Hours

ISP116 Computer Foundations .............................................................................................................................24

CNP104 Windows Operating System and PC Hardware ......................................................................................216

CNP205 Introduction to Network Concepts ......................................................................................................... 192

CNP210 Computer Maintenance and Troubleshooting ..................................................................................... 180

Total Program Hours: ............................................................................................................................................ 400

+ Indicates course has prerequisites and/or co-requisites.

++ Indicates any module suffixed courses.
Certificate & Degree Program 2019-2020

**COMPUTER - NETWORKING TECHNOLOGY: CISCO**

**CERTIFICATE OF COMPLETION IN NETWORKING TECHNOLOGY: CISCO**

(22 CREDITS; CODE 5967)

Students must earn a grade of C or better in all courses within the program. This program is designed to prepare students for the Cisco Certified Networking Associate (CCNA) examination. Completion of this program provides the skills necessary to install, configure, maintain, and troubleshoot Cisco routers and switches. Students will learn to configure advanced routing and switching protocols, local area networks (LANs), and wide area networks (WANs) to troubleshoot problems with various hardware and software configurations and perform administrative tasks in a network. The courses in the program are also designed to help students prepare for the Cisco Certified Networking Associate (CCNA) examination. Students are taught by Cisco Certified Professionals using the Cisco Networking Academy program curriculum.

**Program Notes:**

- Students must earn a grade of C or better in all courses required within the program.
- * indicates course has prerequisite and/or corequisite(s).

**Program Prerequisites:**

- None

**Required Courses**

- BPC170+ A+ Exam Prep: Computer Hardware Configuration and Support (3) OR
  - Any approved general education course from the Natural Sciences area (3)

- CIS126++/+ Any UNIX/Linux Operating System course(s) (1-3) OR
  - MST150++/+ Any Microsoft Windows Operating System course(s) (1-3)
  - Any approved general education course from the Mathematics area (3)
  - Any approved general education course from the Humanities, Arts and Design area (3)
  - Any approved general education course from the Social-Behavioral Sciences area (3)
  - Any approved general education course from the Natural Sciences area (4)

**Equivalent as indicated by assessment (0)**

**Total Program Hours:** 22

**Certificate of Competency (CCT) in Networking Technology: Cisco**

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Notes:**

- Standards aligned to CompTIA Security+ certification exam.

**Program Prerequisites:**

- CompTIA Network+ certification or applicable IT field experience.

**Required Courses**

- CNP205 Introduction to Network Concepts (3)
  - CNP210 Computer Maintenance and Troubleshooting (3)
  - CNP250 Information Security (4)

**Total Program Hours:** 400

**Computer Support Specialist**

**CERTIFICATE OF COMPETENCY IN COMPUTER SUPPORT SPECIALIST**

(612 CLOCK HOURS; CODE 1163-NIGHT)

Students must earn a grade of C or better in all courses within the program.

**Program Notes:**

- Standards aligned to CompTIA Security+ certification exam.

**Program Prerequisites:**

- CompTIA Network+ certification or applicable IT field experience.

**Required Courses**

- ISP116 Computer Foundations (4)
  - CNP104 Windows Operating System and PC Hardware (4)
  - CNP205 Introduction to Network Concepts (4)
  - CNP210 Computer Maintenance and Troubleshooting (4)

**Total Program Hours:** 612

- * Indicates course has prerequisites and/or co-requisites.
- ++ Indicates any module suffixed courses.
FIELD OF INTEREST: CULTURE AND SOCIETY

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Arts Degree (AA) is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors in the Liberal Arts or programs of study other than business or science.

Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

TRANSFER PATHWAY PROGRAMS

MCCCD Transfer Pathway Programs were created to allow Maricopa Community College students a smooth transition into an in-state college such as ASU, NAU, or UA.

(Please click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

ANTHROPOLOGY (AA)
COMMUNICATION (AA)
ECONOMICS (AA)
ENGLISH (LITERATURE) (AA)
SOCIOLOGY (AA)

FIELD OF INTEREST: EDUCATION

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Arts, Elementary Education Degree (AAEE) is designed for the student who plans to transfer to an Elementary Education, Early Childhood, Multicultural/Multilingual, or Special Education program at an Arizona public higher education institution and/or who plans to become a classroom instructional aide.

Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

TRANSFER PATHWAY PROGRAMS

MCCCD Transfer Pathway Programs were created to allow Maricopa Community College students a smooth transition into an in-state college such as ASU, NAU, or UA.

(Please click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

ELEMENTARY EDUCATION (AAEE)
FIELD OF INTEREST: CULTURE AND SOCIETY

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Arts Degree (AA) is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors in the Liberal Arts or programs of study other than business or science.

Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

TRANSFER PATHWAY PROGRAMS

MCCCD Transfer Pathway Programs were created to allow Maricopa Community College students a smooth transition into an in-state college such as ASU, NAU, or UA.

(Click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

ANTHROPOLOGY (AA)

COMMUNICATION (AA)

ECONOMICS (AA)

ENGLISH (LITERATURE) (AA)

SOCIOLOGY (AA)

FIELD OF INTEREST: EDUCATION

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Arts, Elementary Education Degree (AAEE) is designed for the student who plans to transfer to an Elementary Education, Early Childhood, Multicultural/Multilingual, or Special Education program at an Arizona public higher education institution and/or who plans to become a classroom instructional aide.

Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

TRANSFER PATHWAY PROGRAMS

MCCCD Transfer Pathway Programs were created to allow Maricopa Community College students a smooth transition into an in-state college such as ASU, NAU, or UA.

(Click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

ELEMENTARY EDUCATION (AAEE)
FIELD OF INTEREST: HEALTH SCIENCES

CREDIT-HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Arts Degree (AA) is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors in the Liberal Arts or programs of study other than business or science.

- Associate in Applied Science Degree (AAS) is recommended for students who wish to gain a depth of technical expertise by completing an occupational program that leads directly into the world of work.

- Certificate of Completion (CCL) is a program of study that is recommended for students who wish to gain technical expertise in an occupational program that requires less time and credit hours to complete than an AAS degree. Some CCLs are also included in the AAS degree program of study.

Denotes Clock Hour Program

CLOCK HOUR PROGRAMS are hands-on, industry-driven, and short-term.

- Certificate of Competency (CCT) is a program of study that is recommended for students who wish to gain expertise in a targeted area leading directly into the world of work. Such programs are offered for a specific length of time based on the total number of hours needed to complete the program.

Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

PROGRAMS
(Please click program title for detailed information.)

BEAUTY - AESTHETICIAN (CCT)  
BEAUTY - AESTHETICS INSTRUCTOR (CCT)  
BEAUTY - COSMETOLOGIST (CCT)  
BEAUTY - COSMETOLOGY HIGH SCHOOL (CCT)  
BEAUTY - COSMETOLOGY Instructor (CCT)  
BEAUTY - HAIR STYLIST (CCT)  
ELECTRONEURODIAGNOSTIC (END) TECHNOLOGY (AAS)  
EMERGENCY MEDICAL SERVICES AND FIRE PREPARATORY ACADEMY (CCT)  
EMERGENCY MEDICAL TECHNOLOGY (EMT) (CCT)  
HEALTH SERVICES MANAGEMENT (AAS)  
HEALTH SERVICES MANAGEMENT (CCL)  
HEALTH UNIT COORDINATING/PATIENT CARE ASSOCIATE (CCL)  
HEALTHCARE REGULATORY COMPLIANCE (CCL)  
HOSPITAL CENTRAL SERVICE TECHNOLOGY (CCL)  
MASSAGE THERAPY (CCT)  
MEDICAL ASSISTANT (CCT)  
MEDICAL BILLING AND CODING (CCT)  
MEDICAL INTERPRETER - SPANISH (CCT)  
NUCLEAR MEDICINE TECHNOLOGY (AAS)  
NURSING: MARICOPANURSING - FAST TRACK PRACTICAL NURSING (CCL)  
NURSING: MARICOPANURSING - NURSE ASSISTING (CCL)  
NURSING: MARICOPANURSING - NURSING REFRESHER (CCL)  
NURSING: MARICOPANURSING - NURSING (REGISTERED NURSE) (AAS)  
NURSING - OPERATING ROOM NURSING (CCL)  
OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY (AAS)  
OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY (CCL)  
OCCUPATIONAL THERAPY ASSISTANT (AAS)  
OPHTHALMIC MEDICAL ASSISTANT (CCT)  
PHARMACY TECHNICIAN (CCT)  
PHLEBOTOMY (CCT)  
PHYSICAL THERAPIST ASSISTING (AAS)  
POLYSOMNOGRAPHIC TECHNOLOGY (AAS)  
RADIOLOGY - COMPUTED TOMOGRAPHY (CCL)  
RADIOLOGY - DIAGNOSTIC MEDICAL SONOGRAPHY (AAS)  
RADIOLOGY - DIAGNOSTIC MEDICAL SONOGRAPHY (CCL)
FIELD OF INTEREST: HEALTH SCIENCES

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Arts Degree (AA) is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors in the Liberal Arts or programs of study other than business or science.
- Associate in Applied Science Degree (AAS) is recommended for students who wish to gain a depth of technical expertise by completing an occupational program that leads directly into the world of work.
- Certificate of Completion (CCL) is a program of study that is recommended for students who wish to gain technical expertise in an occupational program that requires less time and credit hours to complete than an AAS degree. Some CCLs are also included in the AAS degree program of study.

Denotes Clock Hour Program

CLOCK HOUR PROGRAMS are hands-on, industry-driven, and short-term.

- Certificate of Competency (CCT) is a program of study that is recommended for students who wish to gain expertise in a targeted area leading directly into the world of work. Such programs are offered for a specific length of time based on the total number of hours needed to complete the program.

Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

PROGRAMS
(Please click program title for detailed information.)

- BEAUTY - AESTHETICIAN (CCT)  
- BEAUTY - AESTHETICS INSTRUCTOR (CCT)  
- BEAUTY - COSMETOLOGIST (CCT)  
- BEAUTY - COSMETOLOGIST: HIGH SCHOOL (CCT)  
- BEAUTY - COSMETOLOGY INSTRUCTOR (CCT)  
- BEAUTY - HAIR STYLIST (CCT)  
- ELECTRONEURODIAGNOSTIC (END) TECHNOLOGY (AAS)  
- EMERGENCY MEDICAL SERVICES AND FIRE PREPARATORY ACADEMY (CCT)  
- EMERGENCY MEDICAL TECHNOLOGY (EMT) (CCT)  
- HEALTH SERVICES MANAGEMENT (AAS)  
- HEALTH SERVICES MANAGEMENT (CCL)  
- HEALTH UNIT COORDINATING/PATIENT CARE ASSOCIATE (CCL)  
- HEALTHCARE REGULATORY COMPLIANCE (CCL)  
- HOSPITAL CENTRAL SERVICE TECHNOLOGY (CCL)  
- MASSAGE THERAPY (CCT)  
- MEDICAL ASSISTANT (CCT)  
- MEDICAL BILLING AND CODING (CCT)  
- MEDICAL INTERPRETER - SPANISH (CCT)  
- NUCLEAR MEDICINE TECHNOLOGY (AAS)  
- NURSING: MARICOPANURSING - FAST TRACK PRACTICAL NURSING (CCL)  
- NURSING: MARICOPANURSING - NURSE ASSISTING (CCL)  
- NURSING: MARICOPANURSING - NURSING REFRESHER (CCL)  
- NURSING: MARICOPANURSING - NURSING (REGISTERED NURSE) (AAS)  
- NURSING - OPERATING ROOM NURSING (CCL)  
- OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY (AAS)  
- OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY (CCL)  
- OCCUPATIONAL THERAPY ASSISTANT (AAS)  
- OPHTHALMIC MEDICAL ASSISTANT (CCT)  
- PHARMACY TECHNICIAN (CCT)  
- PHLEBOTOMY (CCT)  
- PHYSICAL THERAPIST ASSISTING (AAS)  
- POLYSOMNOGRAPHIC TECHNOLOGY (AAS)  
- RADIOLOGY - COMPUTED TOMOGRAPHY (CCL)  
- RADIOLOGY - DIAGNOSTIC MEDICAL SONOGRAPHY (AAS)  
- RADIOLOGY - DIAGNOSTIC MEDICAL SONOGRAPHY (CCL)
RADIOLOGY - DIAGNOSTIC MEDICAL SONOGRAPHY: VASCULAR TECHNOLOGY (CCL)
RADIOLOGY - MAGNETIC RESONANCE IMAGING (CCL)
RADIOLOGY - MEDICAL RADIOGRAPHY (AAS)
RADIOLOGY - MUSCULOSKELETAL SONOGRAPHY (CCL)
RESPIRATORY CARE (AAS)
SURGICAL TECHNOLOGY (AAS)
SURGICAL TECHNOLOGY (CCL)

TRANSFER PATHWAY PROGRAMS

MCCCD Transfer Pathway Programs were created to allow Maricopa Community College students a smooth transition into an in-state college such as ASU, NAU, or UA.

(Please click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

NUTRITION (AA)

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BEAUTY - AESTHETICIAN

CERTIFICATE OF COMPETENCY IN AESTHETICIAN

(600 CLOCK HOURS; CODE 1198; 24 HOURS PER WEEK)

(600 CLOCK HOURS; CODE 1196; 20 HOURS PER WEEK)

To qualify, students must earn a passing grade and complete the clock hours required in all courses in the program.

Division: Beauty & Wellness - Aesthetics
Program Manager: Shala Dveirin

Aestheticians are trained skin care professionals who specialize in providing skin care and beauty-related services. Aesthetician students will perform facials, skin analysis, and body treatments, including full body exfoliation. Students will also learn facial and full body hair removal techniques using both hard and soft wax, light exfoliation with fruit acids (peels), microdermabrasion, and dermplaning. Training includes day and evening makeup and artificial eyelash application. Students will perform services on each other throughout the program with 100% participation required. Topics also include knowledge of state laws pertaining to aesthetics as well as business management skills. Upon successful completion of this program, students will be prepared to sit for the Arizona State Board of Cosmetology aesthetics licensing exam.

Program Notes:

Students must successfully pass each course with a minimum grade of 80% and 100% of the course hours required in order to continue on to the next course. Students may apply for graduation from the Aesthetics coursework upon successful completion of their program hours and a score of 80% or higher. Completion of the program does not guarantee students an aesthetic license (in any state). The Arizona State Board of Cosmetology may deny a student's application if it's determined that they do not meet citizenship and/or high school education requirements if under the age of 18. If students have concerns about their citizenship status and/or high school education requirements, they are strongly encouraged to immediately contact the Arizona State Board of Cosmetology via its website: HTTPS://BOC.AZ.GOV, give full disclosure of their situation, and save any written response. GateWay Community College will not give refunds or be held liable for graduates who do not receive an Arizona aesthetic license.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EST101</td>
<td>Aesthetic Orientation</td>
<td>6</td>
</tr>
<tr>
<td>EST103+</td>
<td>Facial Basics</td>
<td>96</td>
</tr>
<tr>
<td>EST104+</td>
<td>Advance Facials</td>
<td>99</td>
</tr>
<tr>
<td>EST105+</td>
<td>Facial Modalities</td>
<td>99</td>
</tr>
<tr>
<td>EST106+</td>
<td>Facial Clinic</td>
<td>50</td>
</tr>
<tr>
<td>EST150+</td>
<td>Hair Removal Methods/Makeup Application</td>
<td>100</td>
</tr>
<tr>
<td>EST151+</td>
<td>Spa Treatments</td>
<td>100</td>
</tr>
<tr>
<td>EST152+</td>
<td>Spa Treatment Clinic</td>
<td>50</td>
</tr>
<tr>
<td>Total Program Hours:</td>
<td></td>
<td>600</td>
</tr>
</tbody>
</table>

BEAUTY - AESTHETICS INSTRUCTOR

CERTIFICATE OF COMPETENCY IN AESTHETICS INSTRUCTOR

(350 CLOCK HOURS; CODE 1195N)

Division: Beauty & Wellness - Aesthetics
Program Manager: Shala Dveirin

Students will prepare to provide instruction for the Aesthetician program students. Additionally, students will learn how to write and deliver a successful lesson plan, and will graduate from the program with the skills necessary for establishing and maintaining an effective classroom. Topics also include knowledge of laws pertaining to the Arizona State Board of Cosmetology, safety and sanitation, and state board regulations. Upon completing the Aesthetics Instructor program, students will be prepared to take the Arizona State Board of Cosmetology's Instructor licensing exam.

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+ Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.
### Certificate & Degree Programs 2019-2020

**RADIOLOGY - DIAGNOSTIC MEDICAL SONOGRAPHY: VASCULAR TECHNOLOGY** (CCL)

**RADIOLOGY - MAGNETIC RESONANCE IMAGING** (CCL)

**RADIOLOGY - MEDICAL RADIOGRAPHY** (AAS)

**RADIOLOGY - MUSCULOSKELETAL SONOGRAPHY** (CCL)

**RESPIRATORY CARE** (AAS)

**SURGICAL TECHNOLOGY** (AAS)

**SURGICAL TECHNOLOGY** (CCL)

### TRANSFER PATHWAY PROGRAMS

MCCCD Transfer Pathway Programs were created to allow Maricopa Community College students a smooth transition into an in-state college such as ASU, NAU, or UA.

(Please click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

### NUTRITION (AA)

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### Certificate & Degree Programs 2019-2020

**BEAUTY - AESTHETICIAN**

- **CERTIFICATE OF COMPETENCY IN AESTHETICIAN**
  - **(600 CLOCK HOURS; CODE 1190; 24 HOURS PER WEEK)**
  - **(600 CLOCK HOURS; CODE 1196; 20 HOURS PER WEEK)**

To qualify, students must earn a passing grade and complete the clock hours required in all courses in the program.

Division: Beauty & Wellness - Aesthetics

Program Manager: Shala Dveirin

Aestheticians are trained skin care professionals who specialize in providing skin care and beauty-related services. Aesthetician students will perform facials, skin analysis, and body treatments, including full body exfoliation. Students will also learn facial and full body hair removal techniques using both hard and soft wax, light exfoliation with fruit acids (peels), microdermabrasion, and dermaplaning. Training includes day and evening makeup and artificial eyelash application. Students will perform services on each other throughout the program with 100% participation required. Topics also include knowledge of state laws pertaining to aesthetics as well as business management skills. Upon successful completion of this program, students will be prepared to sit for the Arizona State Board of Cosmetology aesthetics licensing exam.

Program Notes:

- Students must successfully pass each course with a minimum grade of 80% and 100% of the course hours required in order to continue on to the next course. Students may apply for graduation from the Aesthetics program upon successful completion of their program hours and a score of 80% or higher. Completion of the program does not guarantee students an aesthetician license (in any state). The Arizona State Board of Cosmetology may deny a student's application if it's determined that they do not meet citizenship and/or high school education requirements if under the age of 18. If students have concerns about their citizenship status and/or high school education requirements, they are strongly encouraged to immediately contact the Arizona State Board of Cosmetology via its website: HTTPS://BOC.AZ.GOV, give full disclosure of their situation, and save any written response. GateWay Community College will not give refunds or be held liable for graduates who do not receive an Arizona aesthetician license.

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<tr>
<td>EST104+ Advance Facials</td>
<td>99</td>
</tr>
<tr>
<td>EST105+ Facial Modalities</td>
<td>99</td>
</tr>
<tr>
<td>EST106+ Facial Clinic</td>
<td>50</td>
</tr>
<tr>
<td>EST150+ Hair Removal Methods/Makeup Application</td>
<td>100</td>
</tr>
<tr>
<td>EST151+ Spa Treatments</td>
<td>100</td>
</tr>
<tr>
<td>EST152+ Spa Treatment Clinic</td>
<td>50</td>
</tr>
<tr>
<td>Total Program Hours:</td>
<td>600</td>
</tr>
</tbody>
</table>

**BEAUTY - AESTHETICS INSTRUCTOR**

- **CERTIFICATE OF COMPETENCY IN AESTHETICS INSTRUCTOR**
  - **(350 CLOCK HOURS; CODE 1195N)**

Division: Beauty & Wellness - Aesthetics

Program Manager: Shala Dveirin

Students prepare to provide instruction for the Aesthetician program students. Additionally, students will learn how to write and deliver a successful lesson plan, and will graduate from the program with the skills necessary for establishing and maintaining an effective classroom. Topics also include knowledge of laws pertaining to the Arizona State Board of Cosmetology, safety and sanitation, and state board regulations. Upon completing the Aesthetics Instructor program, students will be prepared to take the Arizona State Board of Cosmetology's Instructor licensing exam.
Program Notes:

Students must complete all required competencies and clock hours as well as receive a score of 80% or higher in the Aesthetics Instructor program in order to be eligible to apply for a certificate of competency. However, a certificate of competency does not guarantee graduates are an instructor in any state. Students must pass the Arizona State board licensing exam in order to teach in Arizona. The Arizona State Board of Cosmetology can deny an application should it be determined that a candidate does not meet the requirements for citizenship and/or high school education requirements. If students have any concerns meeting these requirements, students are strongly encouraged to contact the Arizona State Board of Cosmetology directly via its website: HTTPS://BOC.AZ.GOV give full disclosure of the situation and save any written response. GateWay Community College is not liable for graduates who do not receive an Arizona instructor license and will not give refunds for tuition and fees. Completion of this program is not a guarantee of employment.

Admission Criteria:
1. Must hold current Arizona Aesthetician license in good standing.
2. Must have one year of industry work experience.

Required Courses Clock Hours
COS250 Instructor In Training Orientation ................................................................. 80
COS251+ Instructor In Training I ................................................................. 135
COS252+ Instructor In Training II ................................................................. 135
Total Program Hours: ................................................................................................... 350

Program Notes:

Students must successfully pass each course with a minimum grade of 80% and 100% of the course hours required in order to continue on to the next course. Students may apply for graduation from the Cosmetologist program upon successful completion of the program hours and a score of 80% or higher. Completion of the program does not guarantee a cosmetologist license (in any state). The Arizona State Board of Cosmetology may deny an application if it's determined that the student does not meet citizenship and/or high school education requirements if under the age of 18. If students have concerns about their citizenship status and/or high school education requirements, they are strongly encouraged to immediately contact the Arizona State Board of Cosmetology via its website: HTTPS://BOC.AZ.GOV give full disclosure of their situation, and save any written response. GateWay Community College will not give refunds or be held liable for graduates who do not receive an Arizona cosmetologist license.

Program is not financial aid eligible.

Admission Requirements:
Admission is offered through participation in a high school partnership program.

Required Courses Clock Hours
CEA101 Cosmetology Concepts and Basic Clinic ................................................................. 388
CEA105+ Cosmetology Concepts and Basic Clinic II ......................................................... 412
CEA110+ Cosmetology Advanced Clinic and Certification Prep II ................................. 388
CEA115+ Cosmetology Advanced Clinic and Certification Prep III ............................... 412
Total Program Hours: ................................................................................................... 1600

Program Notes:

Students must successfully pass each course with a minimum grade of 80% and 100% of the course hours required in order to continue on to the next course. Students may apply for graduation from the Cosmetologist program upon successful completion of the program hours and a score of 80% or higher. Completion of the program does not guarantee a cosmetologist license (in any state). The Arizona State Board of Cosmetology may deny an application if it's determined that the student does not meet citizenship and/or high school education requirements if under the age of 18. If students have concerns about their citizenship status and/or high school education requirements, they are strongly encouraged to immediately contact the Arizona State Board of Cosmetology via its website: HTTPS://BOC.AZ.GOV give full disclosure of their situation, and save any written response. GateWay Community College will not give refunds or be held liable for graduates who do not receive an Arizona cosmetologist license.

Program is not financial aid eligible.

Admission Requirements:
Admission is offered through participation in a high school partnership program.

Required Courses Clock Hours
COS112 Hair Essentials ....................................................................................................... 400
COS114+ Student Salon 1 ................................................................................................. 200
COS116+ Student Salon 2 ................................................................................................. 200

++ Indicates any module suffixed courses.
+ Indicates course has prerequisites and/or co-requisites.
* Indicates course has prerequisites and/or co-requisites.
Certificate & Degree Programs 2019-2020

Program Notes:
Students must complete all required competencies and clock hours as well as receive a score of 80% or higher in the Aesthetics Instructor program in order to be eligible to apply for a certificate of competency. However, a certificate of competency does not guarantee graduates are an instructor in any state. Students must pass the Arizona state board licensing exam in order to teach in Arizona. The Arizona State Board of Cosmetology can deny an application should it be determined that a candidate does not meet the requirements for citizenship and/or high school education requirements. If students have any concerns meeting these requirements, students are strongly encouraged to contact the Arizona State Board of Cosmetology directly via its website: HTTPS://BOC.AZ.GOV, give full disclosure of the situation, and save any written response. GateWay Community College is not liable for graduates who do not receive an Arizona Instructor License and will not give refunds for tuition and fees. Completion of this program is not a guarantee of employment.

Admission Criteria:
1. Must hold current Arizona Aesthetician license in good standing.
2. Must have one year of industry work experience.

Required Courses Clock Hours
COS250  Instructor In Training Orientation ................................................................. 80
COS251+ Instructor In Training I .................................................................................. 135
COS252+ Instructor In Training II ............................................................................... 135
Total Program Hours: ........................................................................................................ 350

BEAUTY - COSMETOLOGIST
CERTIFICATE OF COMPETENCY IN COSMETOLOGIST
(1600 CLOCK HOURS; CODE 1193; 32 HOURS PER WEEK)
(1600 CLOCK HOURS; CODE 1194; 20 HOURS PER WEEK)
Division: Beauty & Wellness - Cosmetology
Program Manager: Shala Dveirin

As a cosmetologist, students will provide beauty services such as shampooing and conditioning, cutting, coloring, perming, and styling hair. Additionally, students will brand, press, curl and relax hair, design hairstyles, and provide nail and skin services. All work will be performed safely using proper disinfection and sanitation techniques. Students will graduate from the program with the skills and knowledge necessary for establishing and maintaining a clientele, state laws pertaining to cosmetologists, as well as business management skills to start and manage a salon. Upon completing the Cosmetologist program, students will be prepared to sit for the Arizona State Board of Cosmetology licensing exam.

Program Notes:
Students must successfully pass each course with a minimum grade of 80% and 100% of the course hours required in order to continue on to the next course. Students may apply for graduation from the Cosmetologist program upon successful completion of the program hours and a score of 80% or higher. Completion of the program does not guarantee a cosmetologist license in any state. The Arizona State Board of Cosmetology may deny an application if it’s determined that the student does not meet citizenship and/or high school education requirements if under the age of 18. If students have concerns about their citizenship status and/or high school education requirements, they are strongly encouraged to immediately contact the Arizona State Board of Cosmetology via its website: HTTPS://BOC.AZ.GOV, give full disclosure of their situation, and save any written response. GateWay Community College will not give refunds or be held liable for graduates who do not receive an Arizona cosmetologist license.

Program is not financial aid eligible.

Admission Requirements:
Admission is offered through participation in a high school partnership program.

Required Courses Clock Hours
CEA101  Cosmetology Concepts and Basic Clinic ................................................... 388
CEA105+ Cosmetology Concepts and Basic Clinic II .......................................... 412
CEA110+ Cosmetology Advanced Clinic and Certification Prep I .................... 388
CEA115+ Cosmetology Advanced Clinic and Certification Prep II .................. 412
Total Program Hours: ................................................................................................... 1600

BEAUTY - COSMETOLOGIST (HIGH SCHOOL)
CERTIFICATE OF COMPETENCY IN COSMETOLOGIST
(1600 CLOCK HOURS; CODE 2182N - HIGH SCHOOL)
Division: Beauty & Wellness - Cosmetology
Program Manager: Shala Dveirin

As a cosmetologist, students will provide beauty services such as shampooing and conditioning, cutting, coloring, perming, and styling hair. Additionally, students will brand, press, curl and relax hair, design hairstyles, and provide nail and skin services. All work will be performed safely using proper disinfection and sanitation techniques. Students will graduate from the program with the skills and knowledge necessary for establishing and maintaining a clientele, state laws pertaining to cosmetologists, as well as business management skills to start and manage a salon. Upon completing the Cosmetologist program, students will be prepared to sit for the Arizona State Board of Cosmetology licensing exam.

Program Notes:
Students must successfully pass each course with a minimum grade of 80% and 100% of the course hours required in order to continue on to the next course. Students may apply for graduation from the Cosmetologist program upon successful completion of the program hours and a score of 80% or higher. Completion of the program does not guarantee a cosmetologist license in any state. The Arizona State Board of Cosmetology may deny an application if it’s determined that the student does not meet citizenship and/or high school education requirements if under the age of 18. If students have concerns about their citizenship status and/or high school education requirements, they are strongly encouraged to immediately contact the Arizona State Board of Cosmetology via its website: HTTPS://BOC.AZ.GOV, give full disclosure of their situation, and save any written response. GateWay Community College will not give refunds or be held liable for graduates who do not receive an Arizona cosmetologist license.

Program is not financial aid eligible.

Admission Requirements:
Admission is offered through participation in a high school partnership program.

Required Courses Clock Hours
CEA101  Cosmetology Concepts and Basic Clinic ................................................... 388
CEA105+ Cosmetology Concepts and Basic Clinic II .......................................... 412
CEA110+ Cosmetology Advanced Clinic and Certification Prep I .................... 388
CEA115+ Cosmetology Advanced Clinic and Certification Prep II .................. 412
Total Program Hours: ................................................................................................... 1600

BEAUTY - COSMETOLOGIST INSTRUCTOR
CERTIFICATE OF COMPETENCY IN COSMETOLOGIST INSTRUCTOR
(350 CLOCK HOURS; CODE 1192N)
Division: Beauty & Wellness - Cosmetology
Program Manager: Shala Dveirin

Program Notes:
Students must successfully pass each course with a minimum grade of 80% and 100% of the course hours required in order to continue on to the next course. Students may apply for graduation from the Cosmetologist program upon successful completion of the program hours and a score of 80% or higher. Completion of the program does not guarantee a cosmetologist license in any state. The Arizona State Board of Cosmetology may deny an application if it’s determined that the student does not meet citizenship and/or high school education requirements if under the age of 18. If students have concerns about their citizenship status and/or high school education requirements, they are strongly encouraged to immediately contact the Arizona State Board of Cosmetology via its website: HTTPS://BOC.AZ.GOV, give full disclosure of their situation, and save any written response. GateWay Community College will not give refunds or be held liable for graduates who do not receive an Arizona cosmetologist license.

Program is not financial aid eligible.

Admission Requirements:
Admission is offered through participation in a high school partnership program.

Required Courses Clock Hours
COS119+  Nail Essentials .......................................................... 200
COS212+  Skin Essentials .......................................................... 200
COS214+ Student Salon 3 ............................................................ 200
COS218+ Cosmetology State Licensure Focus ...................................... 200
Total Program Hours: ................................................................................................... 1600

++ Indicates any module suffixed courses.
+ Indicates course has prerequisites and/or co-requisites.
* Indicates course has prerequisites and/or co-requisites.
BEAUTY - HAIR STYLIST

Certificate of Competency in Hair Stylist (1000 Clock Hours; Code 1191; 32 Hours Per Week) (1000 Clock Hours: Code 1198; 20 Hours Per Week)

Division: Beauty & Wellness - Hair Stylist
Program Manager: Shala Dveirin

As a hair stylist, students will provide beauty services such as shampooing and conditioning, cutting, coloring, perming, and styling hair. Additionally, students will brand, press, curl and relax hair and design hairstyles. All work will be performed safely using proper disinfection and sanitation techniques. Students will graduate from the program with the skills necessary for establishing and maintaining a clientele. Topics also include knowledge of laws pertaining to the Arizona State Board of Cosmetology, safety and sanitation, and state board regulations. Upon completing the Hair Stylist program, students will be prepared to take the Arizona State Board of Cosmetology's hair stylist licensing exam.

Program Notes:
1. Students must complete all required competencies and clock hours as well as receive a score of 80% or higher in the Cosmetology Instructor Program in order to be eligible for a certificate of competency. However, a certificate of competency does not guarantee graduates are an Instructor in any state. Students must pass the Arizona State Board of Cosmetology licensing exam in order to teach in Arizona. The Arizona State Board of Cosmetology can deny an application should it be determined that a candidate does not meet the requirements for citizenship and/or high school education requirements. If students have any concerns meeting these requirements, students are strongly encouraged to contact the Arizona State Board of Cosmetology directly via its website: HTTPS://BOC.AZ.GOV, give full disclosure of the situation and save any written response. Gateway Community College is not liable for graduates who do not receive an Arizona Instructor License and will not give refunds for tuition and fees. Completion of this program is not a guarantee of employment.

Admission Criteria:
3. Must hold current Arizona Cosmetologist license in good standing.
4. Must have one year of industry work experience.

Required Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COS250</td>
<td>Instructor In Training Orientation</td>
<td>80</td>
</tr>
<tr>
<td>COS251+</td>
<td>Instructor In Training I</td>
<td>135</td>
</tr>
<tr>
<td>COS252+</td>
<td>Instructor In Training II</td>
<td>135</td>
</tr>
</tbody>
</table>

Total Program Hours: .......................................................... 350

Students will prepare to provide instruction for the Cosmetologist program students. Additionally, students will learn how to write and deliver a successful lesson plan, and will graduate from the program with the skills necessary for establishing and maintaining an effective classroom. Topics also include knowledge of laws pertaining to the Arizona State Board of Cosmetology, safety and sanitation, and state board regulations. Upon completing the instructor program, students will be prepared to take the Arizona State Board of Cosmetology's Instructor licensing exam.

Program Notes:

1. Successful completion of the following college courses with a grade of C or better.
   - BIO160 Introduction to Human Anatomy and Physiology (4) OR
   - BIO201+ Human Anatomy and Physiology (4) AND
   - BIO202+ Human Anatomy and Physiology II (4) .................................................................................................................. 4-8

Certificate & Degree Programs 2019-2020

ELECTRONEURODIAGNOSTIC (END) TECHNOLOGY

ASSOCIATE IN APPLIED SCIENCE DEGREE IN ELECTRONEURODIAGNOSTIC (END) TECHNOLOGY (60.5-79.5 CREDITS; CODE 3136)

To qualify, students must earn a grade of C or better in all courses within the program.

Admission Criteria:

1. Formal application can be made at any time.
2. Formal admission to the Electroneurodiagnostic (END) Technology or the Polysomnography program is required.
3. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
4. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
5. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites: .................................................................................................................................................. 12.5-27.5

Successful completion of the following college courses with a grade of C or better.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COS250</td>
<td>Instructor In Training Orientation</td>
<td>80</td>
</tr>
<tr>
<td>COS251+</td>
<td>Instructor In Training I</td>
<td>135</td>
</tr>
<tr>
<td>COS252+</td>
<td>Instructor In Training II</td>
<td>135</td>
</tr>
</tbody>
</table>

Total Program Hours: .................................................................................................................................. 1000
Students will prepare to provide instruction for the Cosmetologist program students. Additionally, students will learn how to write and deliver a successful lesson plan, and will graduate from the program with the skills necessary for establishing and maintaining an effective classroom. Topics also include knowledge of laws pertaining to the Arizona State Board of Cosmetology, safety and sanitation, and state board regulations. Upon completing the instructor program, students will be prepared to take the Arizona State Board of Cosmetology's Instructor licensing exam.

Program Notes:
Students must complete all required competencies and clock hours as well as receive a score of 80% or higher in the Cosmetology Instructor Program in order to be eligible to apply for a certificate of competency. However, a certificate of competency does not guarantee graduates are an Instructor in any state. Students must pass the Arizona State Board licensing exam in order to teach in Arizona. The Arizona State Board of Cosmetology can deny an application should it be determined that a candidate does not meet the requirements for citizenship and/or high school education requirements. If students have any concerns meeting these requirements, students are strongly encouraged to contact the Arizona State Board of Cosmetology directly via its website: HTTPS://BOC.AZ.GOV, give full disclosure of the situation and save any written response. Gateway Community College is not liable for graduates who do not receive an Arizona Instructor License and will not give refunds for tuition and fees. Completion of this program is not a guarantee of employment.

Admission Criteria:
3. Must hold current Arizona Cosmetologist license in good standing.
4. Must have one year of industry work experience.

Required Courses: Clock Hours
COS250  Instructor In Training Orientation .......................................................... 80
COS251+ Instructor In Training I ........................................................................... 135
COS252+ Instructor In Training II ........................................................................... 135
Total Program Hours: ......................................................................................... 350

BEAUTY - HAIR STYLIST

As a hair stylist, students will provide beauty services such as shampooing and conditioning, cutting, coloring, perming, and styling hair. Additionally, students will braid, press, curl and relax hair and design hairstyles. All work will be performed safely using proper disinfection and sanitation techniques. Students will graduate from the program with the skills necessary for establishing and maintaining a clientele. Topics also include knowledge of laws pertaining to hair stylists, as well as skills necessary for starting and managing a salon. Upon completing the Hair Stylist program, students will be prepared to sit for the Arizona State Board of Cosmetology hair stylist licensing exam.

Program Notes:
Students must successfully pass each course with a minimum grade of 80% and 100% of the course hours required in order to continue on to the next course. Students may apply for graduation from the Hair Stylist program upon successful completion of their program hours and a score of 80% or higher. Completion of the program does not guarantee a hair stylist license (in any state). The Arizona State Board of Cosmetology may deny a student's application if they determine that the student does not meet their other requirements for citizenship and/or high school education requirements.

If students have concerns about their citizenship status and/or high school education requirements, they are strongly encouraged to immediately contact the Arizona State Board of Cosmetology via its website: HTTPS://BOC.AZ.GOV, give full disclosure of their situation, and save any written response. Gateway Community College will not give refunds or be held liable for graduates who do not receive an Arizona hair stylist license.

Admission Criteria:
1. Must hold current Arizona Cosmetologist license in good standing.
2. Formal admission to the Electroneurodiagnostic (END) Technology or the Polysomnography program is required.
3. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
4. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
5. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites: ......................................................................................... 12.5-27.5
Successful completion of the following college courses with a grade of C or better.

BIO160 Introduction to Human Anatomy and Physiology (4) OR
BIO201+ Human Anatomy and Physiology (4) AND
BIO202+ Human Anatomy and Physiology II (4) .................................................................. 4.8

Electroneurodiagnostic (END) Technology

To qualify, students must earn a grade of C or better in all courses within the program.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.

Admission Criteria:
1. Formal application can be made at any time.
2. Formal admission to the Electroneurodiagnostic (END) Technology or the Polysomnography program is required.
3. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
4. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
5. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites: ......................................................................................... 12.5-27.5
Successful completion of the following college courses with a grade of C or better.

BIO160 Introduction to Human Anatomy and Physiology (4) OR
BIO201+ Human Anatomy and Physiology (4) AND
BIO202+ Human Anatomy and Physiology II (4) .................................................................. 4.8
**Certificate & Degree Programs 2019-2020**

Students selecting BIO201 and BIO202 must complete the prerequisite courses BIO146 or BIO181

**BIO146**  
Introductory Biology for Allied Health (4) OR  
Introductory Biology (4) OR  
General Biology (Majors) (4) OR  
One year high school biology with a grade of C or better ........................................ 0-4

**ENG101**  
First-Year Composition (3) OR  
First-Year Composition for ESL (3) ................................................................. 3

**MAT120**  
Intermediate Algebra (5) OR  
Intermediate Algebra (4) OR  
Equivalent course or satisfactory completion of a higher level mathematics course........ 3-5

The following courses may be taken as program prerequisites or concurrent with required courses. HCC courses must be completed prior to clinical if taken concurrent with required courses:

**HCC/RES109**  
CPR for Health Care Provider (0.5) OR  
Proof of Current Health Care Provider CPR Certification (0) ........................................ 0-0.5

**HCC130**  
Fundamentals in Health Care Delivery (3) OR  
Health Care Today (0.5) AND  
Workplace Behaviors in Health Care (0.5) AND  
Personal Wellness and Safety (0.5) AND  
Communication and Teamwork in Health Care Organizations (0.5) AND  
Legal Issues in Health Care (0.5) AND

**HCC146**  
Common Medical Terminology for Health Care Professionals (2) OR  
Medical Terminology for Health Care Professionals (3) ........................................ 2-3

**HCC164**  
Pharmacology for Allied Health ................................................................. 0.5

**HCC200**  
Basic Client Care for Allied Health (0.5) OR  
Work experience or equivalent course education as evaluated by the GateWay Health Core Curriculum Coordinator ................................................................. 0-0.5

**Required Courses** ........................................................................................................ 37

**EEG115**  
Biomedical Electronic Technology I ................................................................. 2

**EEG116**  
Biomedical Electronic Technology II ................................................................. 3

**EEG130**  
Introduction to EEG ......................................................................................... 4

**EEG140**  
Basic Electroneurodiagnostic Skills .................................................................. 1

**EEG140LL**  
Basic Electroneurodiagnostic Skills Laboratory .................................................. 1

**EEG200**  
Clinical Rotation I ......................................................................................... 3

**EEG201**  
Intermediate EEG ......................................................................................... 3

**EEG201LL**  
Intermediate EEG Laboratory ......................................................................... 1

**EEG205**  
Applied Evoked Potentials and Nerve Conduction Studies .................................. 1

**EEG205LL**  
Applied Evoked Potentials and Nerve Conduction Studies Laboratory ............... 1

**EEG206**  
Advanced EEG ............................................................................................... 1

**EEG206LL**  
Advanced EEG Laboratory ........................................................................... 1

**EEG207**  
Electroneurodiagnostic Record Review ............................................................. 4

**EEG211**  
Clinical Rotation II .......................................................................................... 3

**EEG212**  
Clinical Rotation III ........................................................................................ 3

**EEG220AA**  
Volunteerism for Electroneurodiagnostic Technology: Service Learning Experience ........................................................................................................ 1

**HRC101**  
Overview of Healthcare Compliance .................................................................. 1

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**Certificate & Degree Programs 2019-2020**

**General Education Requirement** .................................................................................. 11-15

Three (3) credits of First Year Composition are met by ENG101 or ENG107 in Program Prerequisites area.

**ENG101**  
First-Year Composition (3) OR  
First-Year Composition for ESL (3) ................................................................. 0-3

**ENG111**  
Technical and Professional Writing (3) ............................................................... 3

Any approved general education course from the Oral Communication area .......... 3

**CRE101**  
College Critical Reading and Critical Thinking (3) OR  
Equivalent as indicated by assessment (0) ............................................................. 0-3

Any approved general education course from the Humanities, Arts and Design area.... 3

**PSY101**  
Introduction to Psychology ................................................................................. 1

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**EMERGENCY MEDICAL SERVICES AND FIRE PREPARATORY ACADEMY**

**CERTIFICATE OF COMPETENCY IN EMERGENCY MEDICAL SERVICES AND FIRE PREPARATORY ACADEMY**

**300 CREDIT HOURS; CODE 1302W**

Division: Health

Program Manager: Jennifer Kline

The Certificate of Competency in Emergency Medical Services (EMS) and Fire Preparatory program is designed specifically for individuals seeking a career in the fire-medical service and addresses foundational emergency medical technology, hazardous materials, and firefighting content material, as well as meeting two of the prerequisites for the Fire Department Operations course also known as the “Fire Academy” (FSC102). These two prerequisites are EMT (FSC104) and Hazardous Materials (FSC105). Upon successful completion of the course, the participant will be eligible to sit for the EMT and Haz-Mat certification examinations. The course meets current US DOT national standard education guidelines for Emergency Medical Technician. Course teaches techniques of emergency medical care in accordance with national and state curriculum. Study of the human body, patient assessment, treatment of medically or traumatically compromised patients, special hazards, medical operations, IV monitoring, patient-assisted medication administration, automated external defibrillators (AEDs), and blood-glucose monitoring. The course meets the current Hazardous Materials First Responder certification requirements for the Arizona Center for Fire Service Excellence. The course will cover basic methods of recognition and identification based upon the chemical and physical properties of hazardous materials, basic safety procedures when utilizing specific types of protective clothing and equipment, and basic tactical information relating to scene management. Confined space operations are taught in accordance with the National Fire Protection Agency.

**Program Notes:**  
Program is not financial aid eligible.

Students must successfully complete 10 simulated clinical scenarios, the final cognitive exam and the NREMT Psychomotor Skills exam in order to complete the program.

This program has a strong physical agility component. Students enrolling to this program will be required to have a physical examination and medical clearance prior to enrollment. Students are required to have gym clothing each day as part of the uniform requirement.

Students who become eligible to take the Hazardous Materials examination will be able to take the examination during this course. The expense of the examination is the student's responsibility.

**Prerequisites:** Admitted to program.

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* Indicates course has prerequisites and/or co-requisites.  
** Indicates any module suffixed courses.
## Certificate & Degree Programs 2019-2020

**Students selecting BIO201 and BIO202 must complete the prerequisite courses BIO146 or BIO181.**

**BIO156+**
Introductory Biology for Allied Health (4) OR

**BIO181+**
General Biology (Majors) I (4) OR

One year high school biology with a grade of C or better

**ENG101+**
First-Year Composition (3) OR

**ENG107+**
First-Year Composition for ESL (3)

**MAT120+**
Intermediate Algebra (5) OR

**MAT121+**
Intermediate Algebra (4) OR

**MAT122+**
Intermediate Algebra (3) OR

Equivalent course or satisfactory completion of a higher level mathematics course

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The following courses may be taken as program prerequisites or concurrent with required courses. HCC courses must be completed prior to clinical if taken concurrent with required courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCC/RES109</td>
<td>CPR for Health Care Provider (0.5) OR</td>
<td></td>
</tr>
<tr>
<td>HCC130</td>
<td>Fundamentals in Health Care Delivery (3) OR</td>
<td></td>
</tr>
<tr>
<td>HCC130AA</td>
<td>Health Care Today (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AB</td>
<td>Workplace Behaviors in Health Care (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AC</td>
<td>Personal Wellness and Safety (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AD</td>
<td>Communication and Teamwork in Health Care Organizations (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AE</td>
<td>Legal Issues in Health Care (0.5) AND</td>
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</tr>
<tr>
<td>HCC130AF</td>
<td>Decision Making in the Health Care Setting (0.5) OR</td>
<td></td>
</tr>
<tr>
<td>HCC146</td>
<td>Common Medical Terminology for Health Care Professionals (2) OR</td>
<td></td>
</tr>
<tr>
<td>HCC145</td>
<td>Medical Terminology for Health Care Professionals (3) OR</td>
<td>2-3</td>
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<tr>
<td>HCC164+</td>
<td>Pharmacology for Allied Health</td>
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</tr>
<tr>
<td>HCC200+</td>
<td>Basic Client Care for Allied Health (0.5) OR</td>
<td></td>
</tr>
</tbody>
</table>

Required Courses **37**

**EEG115+**
Biomedical Electronic Technology I

**EEG116+**
Biomedical Electronic Technology II

**EEG130+**
Introduction to EEG

**EEG140+**
Basic Electroneurodiagnostic Skills

**EEG140LL+**
Basic Electroneurodiagnostic Skills Laboratory

**EEG200+**
Clinical Rotation I

**EEG201+**
Intermediate EEG

**EEG201LL+**
Intermediate EEG Laboratory

**EEG205+**
Applied Evoked Potentials and Nerve Conduction Studies

**EEG205LL+**
Applied Evoked Potentials and Nerve Conduction Studies Laboratory

**EEG206+**
Advanced EEG

**EEG206LL+**
Advanced EEG Laboratory

**EEG207+**
Electroneurodiagnostic Record Review

**EEG210+**
Applied Neurophysiology

**EEG211+**
Clinical Rotation II

**EEG220+**
Clinical Rotation III

**EEG282AA+**
Volunteerism for Electroneurodiagnostic Technology: Service Learning Experience

**HRC101**
Overview of Healthcare Compliance

---

**HCC courses must be completed prior to clinical if taken concurrent with required courses.**

**HCC130**
Fundamentals in Health Care Delivery (3) OR

**HCC130AA**
Health Care Today (0.5) AND

**HCC130AB**
Workplace Behaviors in Health Care (0.5) AND

**HCC130AC**
Personal Wellness and Safety (0.5) AND

**HCC130AD**
Communication and Teamwork in Health Care Organizations (0.5) AND

**HCC130AE**
Legal Issues in Health Care (0.5) AND

**HCC130AF**
Decision Making in the Health Care Setting (0.5) OR

**HCC146**
Common Medical Terminology for Health Care Professionals (2) OR

**HCC145**
Medical Terminology for Health Care Professionals (3)

**HCC164+**
Pharmacology for Allied Health

**HCC200+**
Basic Client Care for Allied Health (0.5) OR

**Required Courses**

**EEG115+**
Biomedical Electronic Technology I

**EEG116+**
Biomedical Electronic Technology II

**EEG130+**
Introduction to EEG

**EEG140+**
Basic Electroneurodiagnostic Skills

**EEG140LL+**
Basic Electroneurodiagnostic Skills Laboratory

**EEG200+**
Clinical Rotation I

**EEG201+**
Intermediate EEG

**EEG201LL+**
Intermediate EEG Laboratory

**EEG205+**
Applied Evoked Potentials and Nerve Conduction Studies

**EEG205LL+**
Applied Evoked Potentials and Nerve Conduction Studies Laboratory

**EEG206+**
Advanced EEG

**EEG206LL+**
Advanced EEG Laboratory

**EEG207+**
Electroneurodiagnostic Record Review

**EEG210+**
Applied Neurophysiology

**EEG211+**
Clinical Rotation II

**EEG220+**
Clinical Rotation III

**EEG282AA+**
Volunteerism for Electroneurodiagnostic Technology: Service Learning Experience

**HRC101**
Overview of Healthcare Compliance

---

**EMERGENCY MEDICAL SERVICES AND FIRE PREPARATORY ACADEMY**

**CERTIFICATE OF COMPETENCY IN EMERGENCY MEDICAL SERVICES AND FIRE PREPARATORY ACADEMY**

**300 CLOKCH HOURS; CODE 1302N**

Division: Health

Program Manager: Jennifer Kline

The Certificate of Competency in Emergency Medical Services (EMS) and Fire Preparatory program is designed specifically for individuals seeking a career in the fire-medical service and addresses foundational emergency medical technology, hazardous materials, and firefighting content material, as well as meeting two of the prerequisites for the Fire Department Operations course also known as the “Fire Academy” (FSC102). These two prerequisites are EMT (EMT/FSC104) and Hazardous Materials (FSC105). Upon successful completion of the course, the participant will be eligible to sit for the EMT and Haz-Mat certification examinations. The course meets current USDOT national standard education guidelines for Emergency Medical Technician. Course teaches techniques of emergency medical care in accordance with national and state curriculum. Study of the human body, patient assessment, treatment of medically or traumatically compromised patients, special hazards, medical operations, IV monitoring, patient-assisted medication administration, automated external defibrillators (AEDs), and blood glucose monitoring. The course meets the current Hazardous Materials First Responder certification requirements for the Arizona Center for Fire Service Excellence. The course will cover basic methods of recognition and identification based upon the chemical and physical properties of hazardous materials, basic safety procedures when utilizing specific types of protective clothing and equipment, and basic tactical information relating to scene management. Confined space operations are taught in accordance with the National Fire Protection Agency.

**Program Notes:**

Program is not financial aid eligible.

Students must successfully complete 10 simulated clinical scenarios, the final cognitive exam and the NREMT Psychomotor Skills exam in order to complete the program.

This program has a strong physical agility component. Students enrolling in this program will be required to have a physical examination and medical clearance prior to enrollment. Students are required to have gym clothing each day as part of the uniform requirement.

Students who become eligible to take the Hazardous Materials examination will be able to take the examination during this course. The expense of the examination is the student’s responsibility.

**Prerequisites:** Admitted to program.

---

**Certificate & Degree Programs 2019-2020**

**General Education Requirement**

Three (3) credits of First Year Composition are met by ENG101 or ENG107 in Program Prerequisites area.

**ENG101+**
First-Year Composition (3) OR

**ENG107+**
First-Year Composition for ESL (3) OR

**ENG111+**
Technical and Professional Writing (3)

Any approved general education course from the Oral Communication area

**CRE101+**
College Critical Reading and Critical Thinking (3) OR

Equivalent as indicated by assessment (0)

Any approved general education course from the Humanities, Arts and Design area

**PSY101**
Introduction to Psychology

---

* Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.
## Certificate & Degree Programs 2019-2020

**Certificate & Degree Programs 2019-2020**

**Certificate of Competency in Emergency Medical Technology (EMT)**

**Program:** Emergency Medical Technology

**Program Manager:** Jennifer Kline

The Certificate of Competency (CCT) in Emergency Medical Technology (EMT) program includes techniques of emergency care, stabilization, and immobilization of a victim's illness and injuries. Recognition and documentation of signs and symptoms of illness and injury, intervention, and evaluation of the intervention are integrated into the program. Techniques for assessment, administration of oxygen, use of specific immobilization devices, and preparation for transportation are other areas of the program.

As an EMT student, you will be challenged daily in class as you learn the crucial skills needed to perform in emergency medicine. The EMT program will take students with minimal to zero medical knowledge and in 20 weeks have them trained and prepared to assist people in their most critical time of need. EMT’s are trained to handle events such as heart attacks, strokes, internal bleeding, diabetic problems, and trauma patients.

The EMT program is the first step toward a career in emergency medical services. The techniques taught in the program are in accordance with the state and national curriculum. Successful completion of this program will make students eligible to sit for the National Registry of Emergency Medical Technicians (NREMT) certification examination in order to gain state certification.

**Program Notes:**

- Program is not financial aid eligible.

- Students must successfully complete 10 simulated clinical scenarios, the final cognitive exam and the NREMT Psychomotor Skills exam in order to complete the program.

**Admission Requirements:**

1. 17 1/2 years of age to enroll
2. Healthcare signature form completed
3. Immunization declaration form completed
4. Accuplacer Reading score of 74, or greater or Accuplacer Next Generation score of 249 or greater, or ACT Reading score of 22 or greater, or high school GPA of 3.0 or higher (within the last 10 years), or GED Reading score of 175 or higher, or successful completion of RDG100 or CRE101 with a grade of C or better.

**Program Prerequisites:** Admitted to program.

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMC108 Emergency Medical Services and Fire Preparatory Academy</td>
<td>300</td>
</tr>
</tbody>
</table>

**Total Program Hours:**

**Admission Requirements:**

- 17 1/2 years of age to enroll
- Healthcare signature form completed
- Immunization declaration form completed
- Accuplacer Reading score of 74, or greater or Accuplacer Next Generation score of 249 or greater, or ACT Reading score of 22 or greater, or high school GPA of 3.0 or higher (within the last 10 years), or GED Reading score of 175 or higher, or successful completion of RDG100 or CRE101 with a grade of C or better.
- Current and valid government issued photo identification.

**Program Prerequisites:** Admitted to program.

### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMC101 CPR/Basic Cardiac Life Support</td>
<td>8</td>
</tr>
<tr>
<td>EMC102 Emergency Medical Responder</td>
<td>40</td>
</tr>
<tr>
<td>EMC104 Basic Emergency Medical Technology</td>
<td>152</td>
</tr>
</tbody>
</table>

**Total Program Hours:**

**Certificate and Degree Programs 2019-2020**

**Health Services Management**

**Associate in Applied Science Degree in Health Services Management**

(61-89 CREDITS; CODE 3336)

To qualify, students must earn a grade of C or better in all courses within the program.

**Program:** Health Sciences

**Program Director:** Wendi Nugent

The Associate in Applied Science (AAS) in Health Services Management program prepares students to become supervisors and managers in all types of varied health care settings. Classroom experiences focus on the development of skills to be an effective leader and planner, capable of directing, coaching and developing motivated employees and employee teams. This is a program for current supervisors and managers who would like to enhance their skills as well as other employees currently working in a health care discipline who would like to take on more responsibilities. It is also appropriate for individuals planning to enter a health care field who may wish to be candidates for promotional opportunities.

**Program Notes:**

- Students must earn a grade of C or better in all courses within the program.
- + indicates course has prerequisites and/or corequisites.

### Program Prerequisites

**Required Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Clock Hours</th>
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</thead>
<tbody>
<tr>
<td>HCC130 Fundamentals in Health Care Delivery</td>
<td>3 OR</td>
</tr>
<tr>
<td>HCC130AA Health Care Today</td>
<td>0.5 AND</td>
</tr>
<tr>
<td>HCC130AB Workplace Behaviors in Health Care</td>
<td>0.5 AND</td>
</tr>
<tr>
<td>HCC130AC Personal Wellness and Safety</td>
<td>0.5 AND</td>
</tr>
<tr>
<td>HCC130AD Communication and Teamwork in Health Care Organizations</td>
<td>0.5 AND</td>
</tr>
<tr>
<td>HCC130AE Legal Issues in Health Care</td>
<td>0.5 AND</td>
</tr>
<tr>
<td>HCC130AF Decision making in the Health Care Setting</td>
<td>0.5 3 OR</td>
</tr>
<tr>
<td>Work experience or equivalent course education as evaluated by the Gateway Health Core Curriculum Coordinator</td>
<td>0-3</td>
</tr>
<tr>
<td>HCC130B Medical Terminology for Health Care Professionals</td>
<td>3 OR</td>
</tr>
<tr>
<td>Work experience or equivalent course education as evaluated by the Gateway Health Core Curriculum Coordinator</td>
<td>0-3</td>
</tr>
<tr>
<td>ACC111 Accounting Principles I</td>
<td>3</td>
</tr>
<tr>
<td>BPC/CIS+++/++ Any 100/200 level BPC Business-Personal Computers</td>
<td>2 OR</td>
</tr>
<tr>
<td>CIS Computer Information Systems course</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total Program Hours:**

**Production Notes:**

- + Indicates course has prerequisites and/or co-requisites.
- ** Indicates any module suffixed courses.
Admission Requirements:
1. 17 1/2 years of age to enroll
2. Healthcare signature form completed
3. Immunization declaration form completed
4. Accuplacer Reading score of 74, or greater or Accuplacer Next Generation score of 249 or greater, or ACT Reading score of 22 or greater, or high school GPA of 3.0 or higher (within the last 10 years), or GED Reading score of 175 or higher, or successful completion of RDG100 or CRE101 with a grade of C or better.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMC108</td>
<td>Emergency Medical Services and Fire Preparatory Academy</td>
</tr>
</tbody>
</table>

Total Program Hours: 300

Program Notes:
- Program is not financial aid eligible.
- Students must successfully complete 10 simulated clinical scenarios, the final cognitive exam and the NREMT Psychomotor Skills exam in order to complete the program.

Program Prerequisites:
- Admitted to program.

** Certificate of Competency in Emergency Medical Technology (EMT)**

EMERGENCY MEDICAL TECHNOLOGY (EMT) (CCT) (200 CLOCK HOURS; CODE 1300N)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Healthcare
Program Manager: Jennifer Kline

The Certificate of Competency (CCT) in Emergency Medical Technology (EMT) program includes techniques of emergency care, stabilization, and immobilization of a victim's illness and injuries. Recognition and documentation of signs and symptoms of illness and injury, intervention, and evaluation of the intervention are integrated into the program. Techniques for assessment, administration of oxygen, use of specific medical devices, and preparation for transportation are other areas of the program.

As an EMT student, you will be challenged daily in class as you learn the crucial skills needed to perform in emergency medicine. The EMT program will take students with minimal to zero medical knowledge and in 20 weeks have them trained and prepared to assist people in their most critical time of need. EMT's are trained to handle events such as heart attacks, strokes, internal bleeding, diabetic problems, and trauma patients.

The EMT program is the first step toward a career in emergency medical services. The techniques taught in the program are in accordance with the state and national curriculum. Successful completion of this program will make students eligible to sit for the National Registry of Emergency Medical Technicians (NREMT) certification examination in order to gain state certification.

Program Notes:
- Program is not financial aid eligible.
- Students must successfully complete 10 simulated clinical scenarios, the final cognitive exam and the NREMT Psychomotor Skills exam in order to complete the program.

Program Prerequisites:
- Admitted to program.
Certificate & Degree Programs 2019-2020

Certificate & Degree Programs 2019-2020

+ Indicates course has prerequisites and/or corequisites.
++ Indicates any module suffixed courses.

GBS233+ Business Communication ................................................................. 3
HRC101 Overview of Healthcare Compliance ...................................................... 1
HRC228+ Healthcare Industry Regulation .......................................................... 3
HRC230+ Healthcare Corporate Compliance Program Design ................................ 3
HRC232+ Health Care Regulatory Compliance Program Design ............................ 3
HRC234+ Health Care Regulatory Enforcement Case Studies .............................. 3
HSM122 Health Services Supervision ............................................................... 3
HSM125 Current Issues in Health Services Management .................................... 3
HSM222 Health Services Management ............................................................ 3
HSM226 Ethics and Legalities of Health Services Management .......................... 3
MG276 Personnel/Human Resources Management ........................................... 3

Option II: Credits: 55-62

For students who have completed the Health Unit Coordinator/Patient Care Associate CCL (S307).

Certificate of Completion in Health Unit Coordinator/Patient Care Associate (S307) ........................................ 16-23

ACC111 Accounting Principles I ..................................................................... 3
BPC/CIS444+/+ Any 100/200 level BPC Business-Personal Computers (2) OR CIS Computer Information Systems course (2) .............................................................................. 2

GBS233+ Business Communication ................................................................. 3
HRC228+ Healthcare Industry Regulation .......................................................... 3
HRC230+ Healthcare Corporate Compliance Program Design ................................ 3
HRC232+ Health Care Regulatory Compliance Program Design ............................ 3
HRC234+ Health Care Regulatory Enforcement Case Studies .............................. 3
HSM122 Health Services Supervision ............................................................... 3
HSM125 Current Issues in Health Services Management .................................... 3
HSM222 Health Services Management ............................................................ 3
HSM226 Ethics and Legalities of Health Services Management .......................... 3
MG276 Personnel/Human Resources Management ........................................... 3

General Education Requirement ..................................................................... 22-27

ENG101+ First-Year Composition (3) OR ENG107+ First-Year Composition for ESL (3) AND ENG102+ First-Year Composition (3) OR ENG108+ First-Year Composition for ESL (3) ................................................................. 6
COM110 Introduction to Human Communication (3) OR COM110 Interpersonal Communication (3) OR COM220 Small Group Communication (3) ................................................................. 3
CRE101 College Critical Reading and Critical Thinking (3) OR Equivalent as indicated by assessment (0) ............................................................................. 0-3

HCC130 Fundamentals in Health Care Delivery (3) OR HCC130A Health Care Today (0.5) AND HCC130B Workplace Behaviors in Health Care (0.5) AND HCC130C Personal Wellness and Safety (0.5) AND HCC130D Communication and Teamwork in Health Care Organizations (0.5) AND HCC130E Legal Issues in Health Care (0.5) AND HCC130F Decision making in the Health Care Setting (0.5) 3 OR Work Experience or equivalent course education as evaluated by the GateWay Health Core Curriculum Coordinator ........................................... 0-3

HCC145 Medical Terminology for Health Care Professionals (3) OR Work experience or equivalent course education as evaluated by the GateWay Health Core Curriculum Coordinator ........................................... 0-3

HEALTH SERVICES MANAGEMENT

Certificate of Completion in Health Services Management (13-19 CREDITS; CODE 5336N)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Health Sciences
Program Director: Wendi Nugent

The Certificate of Completion (CCL) in Health Services Management program prepares students to become candidates for leadership, supervisory and management positions in health services settings. The health services supervisor must develop skills to be an effective leader and planner, capable of coaching and developing motivated and committed employees and employee teams.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
This program is not eligible for Title IV Federal Financial Aid.
+ indicates course has prerequisites and/or corequisites.

Program Prerequisites: None

Required Courses ......................................................................................... 13-19

The following HCC courses may be taken as program prerequisites or concurrent with required courses.

HCC130 Fundamentals in Health Care Delivery (3) OR HCC130A Health Care Today (0.5) AND HCC130B Workplace Behaviors in Health Care (0.5) AND HCC130C Personal Wellness and Safety (0.5) AND HCC130D Communication and Teamwork in Health Care Organizations (0.5) AND HCC130E Legal Issues in Health Care (0.5) AND HCC130F Decision making in the Health Care Setting (0.5) 3 OR Work Experience or equivalent course education as evaluated by the GateWay Health Core Curriculum Coordinator ........................................... 0-3

HCC145 Medical Terminology for Health Care Professionals (3) OR Work experience or equivalent course education as evaluated by the GateWay Health Core Curriculum Coordinator ........................................... 0-3

HRC101 Overview of Healthcare Compliance ...................................................... 1
HSM122 Health Services Supervision ............................................................... 3
HSM125 Current Issues in Health Services Management .................................... 3
HSM222 Health Services Management ............................................................ 3
HSM226 Ethics and Legalities of Health Services Management .......................... 3

+ Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>GBS233+</td>
<td>Business Communication</td>
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</tr>
<tr>
<td>HRC101</td>
<td>Overview of Healthcare Compliance</td>
<td>1</td>
</tr>
<tr>
<td>HRC229+</td>
<td>Healthcare Industry Regulation</td>
<td>3</td>
</tr>
<tr>
<td>HRC230+</td>
<td>Healthcare Corporate Compliance Program Design</td>
<td>3</td>
</tr>
<tr>
<td>HRC232+</td>
<td>Health Care Regulatory Compliance Program Design</td>
<td>3</td>
</tr>
<tr>
<td>HRC234+</td>
<td>Health Care Regulatory Enforcement Case Studies</td>
<td>3</td>
</tr>
<tr>
<td>HSM122</td>
<td>Health Services Supervision</td>
<td>3</td>
</tr>
<tr>
<td>HSM125</td>
<td>Current Issues in Health Services Management</td>
<td>3</td>
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<td>HSM222</td>
<td>Health Services Management</td>
<td>3</td>
</tr>
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<td>HSM226</td>
<td>Ethics and Legalities of Health Services Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT276</td>
<td>Personnel/Human Resources Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**Option II: Credits: 55-62**

For students who have completed the Health Unit Coordinator/Patient Care Associate CCL (5307).

Certificate of Completion in Health Unit Coordinator/Patient Care Associate (5307) 16-23

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ACC111</td>
<td>Accounting Principles I</td>
<td>3</td>
</tr>
<tr>
<td>BPC/CIS+++++/+ Any 100/200 level BPC Business-Personal Computers (2) OR CIS Computer Information Systems course (2)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>CSM/TQM101</td>
<td>Quality Customer Service</td>
<td>3</td>
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<tr>
<td>HRC101</td>
<td>Overview of Healthcare Compliance</td>
<td>1</td>
</tr>
<tr>
<td>HRC229+</td>
<td>Healthcare Industry Regulation</td>
<td>3</td>
</tr>
<tr>
<td>HRC230+</td>
<td>Healthcare Corporate Compliance Program Design</td>
<td>3</td>
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<tr>
<td>HRC232+</td>
<td>Health Care Regulatory Compliance Program Design</td>
<td>3</td>
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<td>HRC234+</td>
<td>Health Care Regulatory Enforcement Case Studies</td>
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<td>HSM122</td>
<td>Health Services Supervision</td>
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<td>HSM125</td>
<td>Current Issues in Health Services Management</td>
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<td>HSM222</td>
<td>Health Services Management</td>
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<td>HSM226</td>
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<tr>
<td>MGT276</td>
<td>Personnel/Human Resources Management</td>
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**General Education Requirement** 22-27

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENG101+</td>
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<tr>
<td>ENG107+</td>
<td>First-Year Composition for ESL (3) AND</td>
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</tr>
<tr>
<td>ENG102+</td>
<td>First-Year Composition (3) OR</td>
<td></td>
</tr>
<tr>
<td>ENG108+</td>
<td>First-Year Composition for ESL (3)</td>
<td>6</td>
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<tr>
<td>COM100</td>
<td>Introduction to Human Communication (3) OR</td>
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<td>COM110</td>
<td>Interpersonal Communication (3) OR</td>
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<td>COM230</td>
<td>Small Group Communication (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>CRE101+</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
<td>0-3</td>
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**HEALTH SERVICES MANAGEMENT**

**Certificate of Completion in Health Services Management (13-19 CREDITS; CODE 5336N)**

To qualify, students must earn a grade of C or better in all courses within the program.

**Program Notes:**

- Students must earn a grade of C or better in all courses within the program.
- This program is not eligible for Title IV Federal Financial Aid.
- + indicates course has prerequisites and/or co-requisites.

**Program Prerequisites:** None

**Required Courses** 13-19

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCC130</td>
<td>Fundamentals in Health Care Delivery (3) OR</td>
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</tr>
<tr>
<td>HCC130AA</td>
<td>Health Care Today (0.5) AND</td>
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<tr>
<td>HCC130AC</td>
<td>Workplace Behaviors in Health Care (0.5) AND</td>
<td></td>
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<tr>
<td>HCC130AD</td>
<td>Personal Wellness and Safety (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AE</td>
<td>Communication and Teamwork in Health Care Organizations (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AF</td>
<td>Legal Issues in Health Care (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC145</td>
<td>Medical Terminology for Health Care Professionals (3) OR</td>
<td>0-3</td>
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**General Education Requirement** 0-3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HRC101+</td>
<td>Overview of Healthcare Compliance</td>
<td>1</td>
</tr>
<tr>
<td>HSM122</td>
<td>Health Services Supervision</td>
<td>3</td>
</tr>
<tr>
<td>HSM125</td>
<td>Current Issues in Health Services Management</td>
<td>3</td>
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<tr>
<td>HSM222</td>
<td>Health Services Management</td>
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</tr>
<tr>
<td>HSM226</td>
<td>Ethics and Legalities of Health Services Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**+ Indicates course has prerequisites and/or co-requisites.**

**++ Indicates any module suffixed course.**
HEALTH UNIT COORDINATING/PATIENT CARE ASSOCIATE
CERTIFICATE OF COMPLETION IN HEALTH UNIT COORDINATING/PATIENT CARE ASSOCIATE
(16-17 CREDITS; CODE 5307)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Health Sciences
Chair: Monica Wadsworth-Seibel

The Certificate of Completion (CCL) in Health Unit Coordinating/Patient Care Associate program offers two options which focus on the work involved in the nursing unit in health care facilities.

The Health Unit Coordinating option I focuses on the coordination of non-clinical activities related to patient care. Professional duties include processing doctors’ orders, scheduling diagnostic and treatments for patients, managing patients’ paper and electronic charts, managing unit supplies and equipment, and facilitation of workflow in the health care setting. Communication duties include managing telephone and patient intercom calls.

The Patient Care Associate option II adds the role of the nursing assistant for clients across the wellness/illness continuum within the nurse assisting scope of practice to the Health Unit Coordinator role.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisite and/or co-requisites.
++ Indicates any module suffixed courses.

HCC courses may be taken concurrently with HUC required courses or prior to admittance into the program.

The HUC required courses must be taken concurrently if seeking a Certificate of Completion in Health Unit Coordination/Patient Care Associate with the exception of HUC113 which may be taken one semester prior.

Admission Criteria:
1. Background check requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
2. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
3. Inability to comply with background check requirements and/or clinical health and safety requirements during the program may result in cancellation of enrollment in the HUC115 and HUC116 courses.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 16-17

Two options are available for student enrollment:

Option I - Health Unit Coordinating (HUC) is for entry level students with no prior healthcare experience.
Option II - Patient Care Associate (PCA) is for students who take all the HUC courses with the addition of NUR158 or transfer 5-6 credits in Nursing Assisting from a regionally accredited institution of higher education.

Option I: Health Unit Coordinating Emphasis ......................................................................................................................... 16-17

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HEALTHCARE REGULATORY COMPLIANCE
CERTIFICATE OF COMPLETION IN HEALTHCARE REGULATORY COMPLIANCE
(16-19 CREDITS; CODE 5773)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Health Sciences
Program Director: Wendi Nugent

The Certificate of Completion (CCL) in Healthcare Regulatory Compliance program is designed to provide academic preparation for health care professionals wishing to specialize in health care regulatory compliance.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisite and/or co-requisites.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 16-19

The following HCC courses may be taken as program prerequisites or concurrent with required courses.

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+ Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.
**HEALTH UNIT COORDINATING/PATIENT CARE ASSOCIATE**

**CERTIFICATE OF COMPLETION IN HEALTH UNIT COORDINATING/PATIENT CARE ASSOCIATE**

(16-17 CREDITS; CODE 5307)

To qualify, students must earn a grade of C or better in all courses within the program.

Chair: Monica Wadsworth-Seibel

Division: Health Sciences

The Certificate of Completion (CCL) in Health Unit Coordinating/Patient Care Associate program offers two options which focus on the work involved in the nursing unit in health care facilities.

The Health Unit Coordinating option I focuses on the coordination of non-clinical activities related to patient care. Professional duties include processing doctors' orders, scheduling diagnostic tests and treatments for patients, managing the patients' paper and electronic charts, managing unit supplies and equipment, and facilitation of workflow in the health care setting. Communication duties include managing telephone and patient intercom calls.

The Patient Care Associate option II adds the role of the nursing assistant for clients across the wellness/illness continuum within the nurse assisting scope of practice to the Health Unit Coordinator role.

**Program Notes:**
- Students must earn a grade of C or better for all courses required within the program.
- + indicates course has prerequisite and/or corequisites.
- HCC courses may be taken concurrently with HUC required courses or prior to admittance into the program.

**Admission Criteria:**
1. Background check requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
2. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
3. Inability to comply with background check requirements and/or clinical health and safety requirements during the program may result in cancellation of enrollment in the HUC115 and HUC116 courses.

**Program Prerequisites:** None

**Required Courses** ............................................................................................................................................... 16-17

2. Options are available for student enrollment:
   - Option I - Health Unit Coordinating (HUC) is for entry level students with no prior healthcare experience.
   - Option II - Patient Care Associate (PCA) is for students who take all the HUC courses with the addition of NUR158 or transfer 5-6 credits in Nursing Assisting from a regionally accredited institution of higher education.

**Required Courses** ................................................. 16-17

- **HCC130** Fundamentals in Health Care Delivery (3) OR
- **HCC130A** Health Care Today (0.5) AND
- **HCC130B** Workplace Behaviors in Health Care (0.5) AND
- **HCC130C** Personal Wellness and Safety (0.5) AND
- **HCC130D** Communication and Teamwork in Health Care Organizations (0.5) AND

**Option I: Health Unit Coordinating Emphasis** .................................................................................................................. 16-17

- **HCC145 or HCC146** must be taken within the last 5 academic years.
- **HCC145** Medical Terminology for Health Care Professionals (3) OR
- **HCC146** Common Medical Terminology for Health Care Professionals (2) .................................................. 2-3

- **HUC111** Communication and Hospital Unit Management in Health Unit Coordinating ................................................. 2
- **HUC113** Diagnostic Tests and Treatments .................................................................................................................. 4
- **HUC114** Health Unit Coordinator Procedures ........................................................................................................ 2
- **HUC115** Health Unit Coordinator Clinical ................................................................................................................ 2
- **HUC116** Health Unit Coordinating Clinical Seminar ................................................................................................ 1

**Option II: Patient Care Associate Emphasis** ........................................................................................................... 16-17

- **HCC130AC** Personal Wellness and Safety (0.5) AND
- **HCC130AE** Decision Making in the Health Care Setting (0.5) .................................................................................. 3

- **HCC145** or **HCC146** must be taken within the last 5 academic years.

**Program Notes:**
- Students must earn a grade of C or better in all courses within the program.
- + indicates course has prerequisite and/or corequisites.
- ++ Indicates any module suffixed courses.

**HEALTHCARE REGULATORY COMPLIANCE**

**CERTIFICATE OF COMPLETION IN HEALTHCARE REGULATORY COMPLIANCE**

(16-19 CREDITS; CODE 5773)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Health Sciences

Program Director: Wendi Nugent

The Certificate of Completion (CCL) in Healthcare Regulatory Compliance program is designed to provide academic preparation for health care professionals wishing to specialize in health care regulatory compliance.

**Program Notes:**
- Students must earn a grade of C or better in all courses within the program.
- + indicates course has prerequisite and/or corequisites.

**Program Prerequisites:** None

**Required Courses** ............................................................................................................................................... 16-19

2. The following HCC courses may be taken as program prerequisites or concurrent with required courses.

- **HCC130** Fundamentals in Health Care Delivery (3) OR
- **HCC130A** Health Care Today (0.5) AND
- **HCC130B** Workplace Behaviors in Health Care (0.5) AND
- **HCC130C** Personal Wellness and Safety (0.5) AND
- **HCC130D** Communication and Teamwork in Health Care Organizations (0.5) AND
- **HCC130E** Legal Issues in Health Care (0.5) AND
- **HCC130F** Decision Making in the Health Care Setting (0.5) .................................................................................. 3

- **HCC145 or HCC146** must be taken within the last 5 academic years.
- **HCC145** Medical Terminology for Health Care Professionals (3) OR
- **HCC146** Common Medical Terminology for Health Care Professionals (2) .................................................. 2-3

- **HUC111** Communication and Hospital Unit Management in Health Unit Coordinating ................................................. 2
- **HUC113** Diagnostic Tests and Treatments .................................................................................................................. 4
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- **HUC115** Health Unit Coordinator Clinical ................................................................................................................ 2
- **HUC116** Health Unit Coordinating Clinical Seminar ................................................................................................ 1
### HOSPITAL CENTRAL SERVICE TECHNOLOGY

**CERTIFICATE OF COMPLETION IN HOSPITAL CENTRAL SERVICE TECHNOLOGY**

(17-24.5 CREDITS; CODE 5311)

To qualify, students must earn a grade of C or better in all courses within the program.

**Division:** Health Sciences

**Program Director:** Susan Tome

The Certificate of Completion (CCL) in Hospital Central Service Technology program focuses on the types and names of instrumentation and equipment, decontamination of instrumentation, processing of instruments, a firm foundation in the process of sterilization of instrumentation, storage, quality assurance, instrument tracking systems and methods of delivery. Students will have hands-on skill labs to learn techniques used for building instrument trays, wrapping surgical supplies and familiarizing themselves with care and handling of instrumentation, operating sterilization machines, customer service, and communication techniques. Clinical experience is arranged to give the student working experience in all of the practical areas of this department and delivery to hospitals, intensive care units, the emergency room, specialty clinics, labs and operating rooms.

Graduate students with a certificate of completion are eligible to complete the Certified Registered Central Service Technician (CRCST) certification of International Association of Healthcare Central Service Material Management (IAHCSMM) that prepares them for employment in a hospital, clinics, veterinary hospitals, out-patient hospital settings, endoscopy, manufacturing companies of surgical supplies or bone and tissue banks. In addition, students who complete the program are eligible for advanced standing for entry into the Surgical Technology Associate in Applied Science degree or certificate of completion.

**Program Notes:**

- Students must earn a grade of C or better for all courses required within the program.
- + indicates course has prerequisites and/or corequisites.
- ++ indicates any suffixed courses.

**Admission Criteria:**

1. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
2. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
3. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

**Program Prerequisites:** None

**Required Courses:**

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<td>HCC130B</td>
<td>Workplace Behaviors in Health Care (0.5) AND</td>
<td>0.5</td>
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</tbody>
</table>

Students must successfully pass each course with a minimum grade of 80% and 100% of the course hours required in order to continue on to the next course. Students may apply for graduation from the Massage Therapy program upon successful completion of the program hours and a score of 80% or higher. Completion of the program does not guarantee a massage therapy license (in any state). The Arizona State Board of Massage Therapy may deny the application if they determine the requirements for citizenship and/or criminal background are not met. If students have any concerns about citizenship status and/or a criminal background, they are encouraged to immediately contact the Arizona State Board.
HOSPITAL CENTRAL SERVICE TECHNOLOGY

CERTIFICATE OF COMPLETION IN HOSPITAL CENTRAL SERVICE TECHNOLOGY

(17-24.5 CREDITS; CODE 5311)

To qualify, students must earn a grade of C or better in all courses within the program. 

Division: Health Sciences

Program Director: Susan Tome

The Certificate of Completion (CCL) in Hospital Central Service Technology program focuses on the types and names of instrumentation and equipment, decontamination of instrumentation, processing of instruments, a firm foundation in the process of sterilization of instrumentation, storage, quality assurance, instrument tracking systems and methods of delivery. Students will have hands-on skill labs to learn techniques used for building instrument trays, wrapping surgical supplies and familiarizing themselves with care and handling of instrumentation, operating sterilization machines, customer service, and communication techniques. Clinical experience is arranged to give the student working experience in all of the practical areas of this department and delivery to hospital floors, intensive care units, the emergency room, specialty clinics, labs and operating rooms.

Graduate students with a certificate of completion are eligible to complete the Certified Registered Central Service Technician (CRST) certification of International Association of Healthcare Central Service Material Management (IAHCSMM) that prepares them for employment in a hospital, clinics, veterinary hospitals, out-patient hospital settings, endoscopy, manufacturing companies of surgical supplies or bone and tissue banks. In addition, students who complete the program are eligible for advanced standing for entry into the Surgical Technology Associate in Applied Science degree.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisites and/or co-requisites.
++ indicates any suffixed courses.

Admission Criteria:
1. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
2. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
3. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites: None

Required Courses: 17-24.5

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Certificate of competency in Massage Therapy

CERTIFICATE OF COMPETENCY IN MASSAGE THERAPY

(700 CLOCK HOURS; CODE 1184; 24 HOURS PER WEEK)

Division: Beauty & Wellness - Massage Therapy

Program Manager: Shala Dveirin

Massage therapists use the professional art of therapeutic touch to facilitate healing in the body. The Massage Therapy program builds strong foundational skills for students, equipping them with the tools necessary to succeed in the massage therapy industry. Students learn how to use hands, fingers, forearms, knuckles, fists and elbows when working with the soft tissues of the body. While the program centers heavily on anatomy, Swedish massage, and deep tissue massage, it rounds out students’ education with exposure to Asian modalities, sports massage, pregnancy massage, and business classes. This program provides the training necessary for success in the massage therapy industry regardless of the setting: private practice, spas, fitness centers, sports teams, hospitals, rehabilitation centers and chiropractic offices.

Program Notes:
Students must successfully pass each course with a minimum grade of 80% and 100% of the course hours required in order to continue on to the next course. Students may apply for graduation from the Massage Therapy program upon successful completion of the program hours and a score of 80% or higher. Completion of the program does not guarantee a massage therapy license (in any state). The Arizona State Board of Massage Therapy may deny the application if they determine the requirements for citizenship and/or criminal background are not met. If students have any concerns about citizenship status and/or a criminal background, they are encouraged to immediately contact the Arizona State Board.

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Certificate & Degree Programs 2019-2020

Admission Requirements:
High school diploma or GED

Required Courses                                                                 Clock Hours
PMP120  Massage Therapy Basics ..............................................................................175  
PMP121+ Massage Therapy Advanced ........................................................................175  
PMP220+ Massage Therapy Mastery I .......................................................................175  
PMP221+ Massage Therapy Mastery II ......................................................................175  
Total Program Hours: ................................................................................................700

MDC103  Introduction to Medical Assisting ...............................................................105  
MDC104  Fundamentals of Administrative Medical Assisting .................................215  
MDC105  Fundamentals of Clinical Medical Assisting I .............................................95  
MDC106  Fundamentals of Clinical Medical Assisting II .........................................255  
MDC130  Medical Assisting Practicum ....................................................................160  
Total Program Hours: ..............................................................................................830

Program Notes:
Practicum hours are site specific and may require attendance any day of the week, including during unscheduled days and times.

Admission Requirements:
• 18 years of age to enroll
• High school diploma or GED
• Reading assessment
• Completed admission packet
• Level I Fingerprint Clearance Card
• “Pass” on Supplemental Background Check
• Healthcare Level CPR Card

MEDICAL BILLING AND CODING
CERTIFICATE OF COMPETENCY IN MEDICAL BILLING AND CODING
(805 CLOCK HOURS; CODE 1850; 20 HOURS PER WEEK)
Division: Healthcare
Program Director: Monica Nutter
Program Manager: Janeen Berberian

This program trains students to process medical claims and payment for services in healthcare settings. A medical biller and coder is someone who can work independently, is detail oriented, can interpret reimbursement guidelines and regulations, and has good computer skills. These professionals assign specific codes for diagnosis and procedures performed on a patient and documented in the patient’s health record. They code symptoms, diseases, operations, and treatments according to national classification systems. Upon completion of the coding classes, students are eligible to register and sit for the national Certified Professional Coder (CPC) exam through the American Academy of Professional Coders (AAPC).

Admission Requirements:
• 18 years of age to enroll
• High school diploma or GED
• Reading assessment
• Completed admission packet
• Level I Fingerprint Clearance Card

Required Courses                                                                 Clock Hours
MBC100  Fundamentals of Medical Billing and Coding .............................................324  
MBC110  Medical Billing .........................................................................................110  
MBC120  Medical Coding .........................................................................................296  
MBC130  Examination Review ..................................................................................45  
MBC140  Computers in Medical Billing and Coding ................................................30  
Total Program Hours: ..............................................................................................805

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.
Students will be required to take a randomized urine drug screen and submit a negative result prior to being eligible to participate in clinical externship. The expense of the urine drug screen is the student’s responsibility.

Students are required to complete 40 hours of clinical externship to complete this program. Externship hours are site specific and may require attendance any day of the week, including during unscheduled days and times.

MEDICAL INTERPRETER - SPANISH
CERTIFICATE OF COMPETENCY IN MEDICAL INTERPRETER - SPANISH
(200 CLOCK HOURS; CODE 1900; 6 HOURS PER WEEK)
(200 CLOCK HOURS; CODE 1902N; 12 HOURS PER WEEK)
Division: Healthcare
Program Manager: Jennifer Kline

The Certificate of Competency in Medical Interpreter - Spanish program is a 200-hour introduction to medical interpreting that includes a 40-hour externship. Bilingual individuals who would like to interpret or pursue a bilingual career in a healthcare setting can gain skills necessary to interpret in a manner consistent with national standards of practice for healthcare interpreters. Students learn medical terminology in English and Spanish, body systems, legal issues, ethics, standards of practice, and cultural awareness. Emphasis is placed on practicing interpretation in the consecutive, simultaneous, and basic sight translation modes. This program exceeds the minimum training requirements necessary for students to take the national Spanish Certified Healthcare Interpreter examination through CCHI (Certification Commission for Healthcare Interpreters).

Program Notes:
This program is not eligible for Title IV Federal Financial Aid.

Students will be required to take a randomized urine drug screen and submit a negative result prior to being eligible to participate in clinical externship. The expense of the urine drug screen is the student’s responsibility.

Students are required to complete 40 hours of clinical externship to complete this program. Externship hours are site specific and may require attendance any day of the week, including during unscheduled days and times.
Admission Requirements:

High school diploma or GED

Required Courses

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<tr>
<th>Course Code</th>
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<th>Clock Hours</th>
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<tbody>
<tr>
<td>PMP120</td>
<td>Massage Therapy Basics</td>
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<tr>
<td>PMP121+</td>
<td>Massage Therapy Advanced</td>
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<td>PMP220+</td>
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Total Program Hours: .......................................................... 700

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**MEDICAL ASSISTANT**

**CERTIFICATE OF COMPETENCY IN MEDICAL ASSISTANT**

(830 CLOCK HOURS; CODE 1804; 24 HOURS PER WEEK)

**Division:** Healthcare

**Program Director:** Monica Nutter

**Program Manager:** Janeen Berberian

A medical assistant is an integral member of the healthcare delivery team, qualified by education and experience to work in the administrative office, examining room, and physician office laboratory. The medical assistant, also a liaison between the doctor and patient, is of vital importance to the success of the medical practice. Employment is found in physician offices, clinics, and other healthcare settings. Upon completion of the program, students are eligible to register and sit for a national certification test.

**Program Notes:**
Practicum hours are site specific and may require attendance any day of the week, including during unscheduled days and times.

**Admission Requirements:**
- 18 years of age to enroll
- High school diploma or GED
- Reading assessment
- Completed admission packet
- Level I Fingerprint Clearance Card

<table>
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<tr>
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<td>MDC104</td>
<td>Fundamentals of Administrative Medical Assisting</td>
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<td>MDC105</td>
<td>Fundamentals of Clinical Medical Assisting I</td>
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<tr>
<td>MDC130</td>
<td>Medical Assisting Practicum</td>
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</table>

Total Program Hours: .......................................................... 830

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**MEDICAL BILLING AND CODING**

**CERTIFICATE OF COMPETENCY IN MEDICAL BILLING AND CODING**

(805 CLOCK HOURS; CODE 1850; 20 HOURS PER WEEK)

**Division:** Healthcare

**Program Director:** Monica Nutter

**Program Manager:** Janeen Berberian

This program trains students to process medical claims and payment for services in healthcare settings. A medical biller and coder is someone who can work independently, is detail oriented, can interpret reimbursement guidelines and regulations, and has good computer skills. These professionals assign specific codes for diagnosis and procedures performed on a patient and documented in the patient’s health record. They code symptoms, diseases, operations, and treatments according to national classification systems. Upon completion of the coding classes, students are eligible to register and sit for the national Certified Professional Coder (CPC) exam through the American Academy of Professional Coders (AAPC).

**Admission Requirements:**
- 18 years of age to enroll
- High school diploma or GED
- Reading assessment
- Completed admission packet
- Level I Fingerprint Clearance Card

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<td>Computers in Medical Billing and Coding</td>
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Total Program Hours: .......................................................... 805

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**MEDICAL INTERPRETER - SPANISH**

**CERTIFICATE OF COMPETENCY IN MEDICAL INTERPRETER - SPANISH**

(200 CLOCK HOURS; CODE 1900N; 6 HOURS PER WEEK)

**Division:** Healthcare

**Program Director:** Jennifer Kline

The Certificate of Competency in Medical Interpreter - Spanish program is a 200-hour introduction to medical interpreting that includes a 40-hour externship. Bilingual individuals who would like to interpret or pursue a bilingual career in a health care setting can gain skills necessary to interpret in a manner consistent with national standards of practice for healthcare interpreters. Students learn medical terminology in English and Spanish, body systems, legal issues, ethics, standards of practice, and cultural awareness. Emphasis is placed on practicing interpretation in the consecutive, simultaneous, and basic sight translation modes. This program exceeds the minimum training requirements necessary for students to take the national Spanish Certified Healthcare Interpreter examination through CCHI (Certification Commission for Healthcare Interpreters).

**Program Notes:**
This program is not eligible for Title IV Federal Financial Aid.

* Students will be required to take a randomized urine drug screen and submit a negative result prior to be eligible to participate in clinical externship. The expense of the urine drug screen is the student’s responsibility.

* Students are required to complete 40 hours of clinical externship to complete this program. Externship hours are site
Specific and may require attendance any day of the week, including during unscheduled days and times.

Students must meet all required program competencies in order to receive a passing grade. This program is a P (pass) or Z (no pass) graded program.

Upon successful completion of the program, students will be eligible to take the national certification exam through CCHI and NBMI.

**Admission Requirements:**
1. 18 years of age to enroll
2. Accuplacer Reading score of 74, or greater or Accuplacer Next Generation score of 249 or greater, or ACT Reading score of 22 or greater, or high school GPA of 3.0 or higher (within the last 10 years), or GED Reading score of 175 or higher, or successful completion of RDG100 or CRE101 with a grade of C or better
3. Completed admission packet
4. Arizona Level One Fingerprint Clearance Card (DPS)
5. Proof of immunizations
6. Healthcare Level CPR Card
7. Healthcare signature form completed
8. MCCCD Supplemental Background Check
9. Current and valid government issued photo identification
10. Required to sign up and pay for Castle Branch and myCLINicExchange
11. Students must take and pass the written and oral English and Spanish assessment tests. The written exam can be taken at either Central City or EMCC Testing Center in Avondale.

**Required Courses**

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**NUCLEAR MEDICINE TECHNOLOGY**

**Associate in Applied Science Degree in Nuclear Medicine Technology (150-111 Credits; Code 3648)**

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Medical Imaging and Cardiopulmonary Sciences
Program Director: Jeanne Dial

The Associate in Applied Science (AAS) in Nuclear Medicine Technology is designed to develop competent entry-level nuclear technologists through a variety of didactic, clinical, and laboratory experiences. Upon completion of the program, the student will be able to: model the highest ethical standards and adherence to published standards of radiation protection and regulatory compliance, utilize critical-thinking and problem-solving skills to make sound decisions, utilize professional literature to enhance clinical practice and personal and professional growth, and collaborate with other medical professionals on interdisciplinary teams. Upon successful completion, students are eligible to sit for board certification and may pursue stackable post-primary certifications. The curriculum is structured to provide appropriate didactic and lab instruction, as well as ample supervised clinical exposure, to ensure sufficient opportunity to achieve all didactic and clinical requirements.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.

* indicates course has prerequisite and/or corequisites.
** indicates any module suffixed courses.

**Certificate & Degree Programs 2019-2020**

**Admission Criteria:**
1. Formal application and admission to the program.
2. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
3. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the clinical health and safety policy.
4. Inability to comply with background check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

**Readmission Criteria:**

The Program reserves the right to deny acceptance of an admission application if the applicant was dismissed from any program for issues relating to academic integrity and/or unsafe patient care.

**Program Prerequisites:**

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**Certificate & Degree Programs 2019-2020**

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**Certificate & Degree Programs 2019-2020**

**Admission Criteria:**
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4. Inability to comply with background check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

**Readmission Criteria:**

The Program reserves the right to deny acceptance of an admission application if the applicant was dismissed from any program for issues relating to academic integrity and/or unsafe patient care.

**Program Prerequisites:**

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</tbody>
</table>
Certificate & Degree Programs 2019-2020

Students must meet all required program competencies in order to receive a passing grade. This program is a P (pass) or Z (no pass) graded program.

Upon successful completion of the program, students will be eligible to take the national certification exam through CCHI and NBMI.

Admission Requirements:
1. 18 years of age to enroll
2. Accuplacer Reading score of 74, or greater or Accuplacer Next Generation score of 249 or greater, or ACT Reading score of 22 or greater, or high school GPA of 3.0 or higher (within the last 10 years), or GED Reading score of 175 or higher, or successful completion of RDG100 or CRE101 with a grade of C or better
3. Completed admission packet
4. Arizona Level One Fingerprint Clearance Card (DPS)
5. Proof of immunizations
6. Healthcare Level CPR Card
7. Healthcare signature form completed
8. MCCCD Supplemental Background Check
9. Current and valid government issued photo identification
10. Required to sign up and pay for Castle Branch and myClinicalExchange
11. Students must take and pass the written and oral English and Spanish assessment tests. The written exam can be taken at either Central City or EMCC Testing Center in Avondale.

Required Courses Clock Hours
MIC101+ Fundamentals of Healthcare Interpreting .................................................................80
MIC103+ Medical and Clinical Development .......................................................................80
MIC105+ Medical Interpreter: Professional Externship ......................................................40

Total Program Hours: ........................................................................................................200

NUCLEAR MEDICINE TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE IN NUCLEAR MEDICINE TECHNOLOGY (150-111 CREDITS; CODE 3630)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Medical Imaging and Cardiopulmonary Sciences
Program Director: Jeanne Dial

The Associate in Applied Science (AAS) in Nuclear Medicine Technology program is designed to develop competent entry-level nuclear technologists through a variety of didactic, clinical, and laboratory experiences. Upon completion of the program, the student will be able to: model the highest ethical standards and adherence to published standards of radiation protection and regulatory compliance, utilize critical thinking and problem-solving skills to make sound decisions, utilize professional literature to enhance clinical practice and personal and professional growth, and collaborate with other medical professionals on interdisciplinary teams. Upon successful completion, students are eligible to sit for board certification and may pursue stackable post-primary certifications. The curriculum is structured to provide appropriate didactic and lab instruction, as well as ample supervised clinical exposure, to ensure sufficient opportunity to achieve all didactic and clinical requirements.

Program Notes:
Students must meet all required program competencies in order to receive a passing grade. This program is a P (pass) or Z (no pass) graded program.

Admission Requirements:
1. Formal application and admission to the program.
2. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
3. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the clinical health and safety policy.
4. Inability to comply with background check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

Readmission Criteria:
The Program reserves the right to deny acceptance of an admission application if the applicant was dismissed from any program for issues relating to academic integrity and/or unsafe patient care.

Program Prerequisites: ........................................................................................................31-41

The following course courses must be completed with a cumulative grade point average (GPA) of 3.0 or higher and with a final grade of C or better.

All previous college semester credits must be from a regionally accredited institution recognized by GateWay Community College with a cumulative grade point average (GPA) of 2.5 or higher.

Students must earn a grade of B or better in ENG102 or ENG108 or ENG111, and NUC100.

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<th>Course Name</th>
<th>Clock Hours</th>
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<tr>
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* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
Certificate & Degree Programs 2019-2020

NURSING: MARICOPANURSING
FAST TRACK PRACTICAL NURSING

Certificate of Completion in Fast Track Practical Nursing (22-29 CREDITS; CODE 5114)

To qualify, students must earn a grade of C or better in all courses or within the program.

Division: Nursing
Program Director: Jeri Lastine

The Certificate of Completion (CCL) in Fast Track Practical Nursing program provides students with the theory and skills required to practice as a practical nurse in acute care, extended care, and intermediate care settings. The program of study combines nursing theory lectures with planned patient care learning experiences in hospitals, nursing homes and health care agencies. Graduates are eligible to take the National Council Licensure Examination (NCLEX-PN) to become a licensed practical nurse (LPN). Licensing requirements are the exclusive responsibility of the Arizona State Board of Nursing.

The Fast Track Practical Nursing Program is approved by the Arizona State Board of Nursing.

Waiver of Licensure/Certification Guarantee:
Admission or graduation from the Nursing Program does not guarantee obtaining a license to practice nursing. Licensure requirements and the subsequent procedures are the exclusive right and responsibility of the Arizona State Board of Nursing. Students must satisfy the requirements of the Nurse Practice Act: Statutes, Rules and Regulations, independently of any college or school requirements for graduation.

Pursuant to A.R.S. 32-1606B(17), an applicant for professional or practical nurse license by examination is not eligible for licensure if the applicant has any felony convictions and has not received an absolute discharge from the sentences for all felony convictions. The absolute discharge must be received five or more years before submitting this application. If you cannot prove that the absolute discharge date is five or more years, the Board cannot process your application.

Level One Fingerprint Clearance is required for admission into the program. Applicants must present a Level One Fingerprint Clearance Card to be copied by the advisor or designee. If there is any question about eligibility for licensure or certification, contact the nursing education consultant at the Arizona State Board of Nursing (602.771.7800).

Health Declaration:
It is essential that nursing students be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform bending activities. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement what is required.

Health and Safety Requirements for the Fast Track Nursing Program:
Guidelines and procedures are designed to ensure safe work environments, promote efficiency, student success, and maintain health and safety for students, patients, and staff. Health and safety are essential to nursing practice. Students must maintain current status throughout the program. Only students in compliance with the mandatory health and safety requirements are permitted to remain enrolled in nursing courses.

Program Director: Jeri Lastine
Division: Nursing

Certificate & Degree Programs 2019-2020

DMT105+ Fundamentals of Radiation Physics (3) OR
PHY101+ Introduction to Physics (4) OR
PHY111+ General Physics I (4) AND
PHY112+ General Physics II (4) ................................................................. 3-8

Until program prerequisites are completed, students are only eligible for conditional admission to the program. All prerequisites must be completed prior to starting the Nuclear Medicine Program of Study.

Required Courses ................................................................. 63
NUC101+ Essentials of Nuclear Medicine Technology ................................................. 1
NUC103+ Nuclear Medicine Image Evaluation I ......................................................... 1
NUC110+ Introduction to Radiation Physics and Biology for Nuclear Medicine .......... 3
NUC112+ Nuclear Medicine Quality Control Laboratory .................................... 1
NUC113+ Nuclear Medicine Clinical Applications Laboratory .............................. 1
NUC114+ Nuclear Medicine Instrumentation ......................................................... 3
NUC116+ Nuclear Medicine Procedures I ......................................................... 3
NUC126+ Nuclear Medicine Procedures II ......................................................... 3
NUC130+ Professionalism and Patient Care ......................................................... 1
NUC212+ Clinical Practicum I ............................................................................. 1.5
NUC220+ Sectional Anatomy for Nuclear Medicine .............................................. 3
NUC222+ Clinical Practicum II ............................................................................ 3
NUC223+ Nuclear Medicine Image Evaluation II ................................................. 1
NUC232+ Clinical Practicum III ............................................................................ 3
NUC233+ Nuclear Medicine Image Evaluation III ................................................. 1
NUC234+ Nuclear Medicine Department Administration ...................................... 3
NUC236+ Nuclear Medicine Procedures III ......................................................... 3
NUC242+ Clinical Practicum IV .......................................................................... 3
NUC243+ Nuclear Medicine Image Evaluation IV ................................................. 1
NUC244+ Nuclear Medicine Radiopharmacy ....................................................... 3
NUC250+ Fundamentals of Computed Tomography ............................................ 2
NUC251+ Computed Tomography (CT) and Positron Emission Tomography (PET)/CT Procedures ................................................................. 2
NUC260+ Research Methods and Design ............................................................ 3
NUC262+ Capstone Practicum ............................................................................. 1.5
NUC272+ Cardiac Practicum .............................................................................. 1.5
NUC276+ Nuclear Cardiology ........................................................................... 3
NUC280+ Nuclear Medicine PET Physics and Instrumentation ............................. 3
NUC283+ PET/CT Practicum .............................................................................. 1.5
NUC290+ Nuclear Medicine Seminar .................................................................. 1

Restrict Electives ................................................................. 0-1
Students interested in more cardiac clinical experience may complete zero (0) to one (1) credit with permission of the Nuclear Medicine Program Director.

NUC108 Structured Diagnostic Medical Imaging Skills Enhancement ......................... 0-1

General Education Requirement ................................................................. 6
Any approved general education course from the Humanities, Arts and Design area 2-3 ................................................................. 3
Any approved general education course from the Social-Behavioral Sciences area ................................................................. 3

++ Indicates any module suffixed courses.
## Certificate & Degree Programs 2019-2020

### NURSING: MARICOPANURSING
**FAST TRACK PRACTICAL NURSING**

**CERTIFICATE OF COMPLETION IN FAST TRACK PRACTICAL NURSING**

(22-29 CREDITS; CODE 5114)

To qualify, students must earn a grade of C or better in all courses or within the program.

**Division:** Nursing

**Program Director:** Jeri Lastine

The Certificate of Completion (CCL) in Fast Track Practical Nursing program provides students with the theory and skills required to practice as a practical nurse in acute care, extended care, and intermediate care settings. The program of study combines nursing theory lectures with planned patient care learning experiences in hospitals, nursing homes and health care agencies. Graduates are eligible to take the National Council Licensure Examination (NCLEX-PN) to become a licensed practical nurse (LPN). Licensing requirements are the exclusive responsibility of the Arizona State Board of Nursing.

The Fast Track Practical Nursing Program is approved by the Arizona State Board of Nursing.

### Waiver of Licensure/Certification Guarantee

Admission or graduation from the Nursing Program does not guarantee obtaining a license to practice nursing. Licensure requirements and the subsequent procedures are the exclusive right and responsibility of the Arizona State Board of Nursing. Students must satisfy the requirements of the Nurse Practice Act: Statutes, Rules and Regulations, independently of any college or school requirements for graduation.

Pursuant to A.R.S. 32-1606(B)(17), an applicant for professional or practical nurse license by examination is not eligible for licensure if the applicant has any felony convictions and has not received an absolute discharge from the sentences for all felony convictions. The absolute discharge must be received five or more years before submitting this application. If you cannot prove that the absolute discharge date is five or more years, the Board cannot process your application.

Level One Fingerprint Clearance is required for admission into the program. Applicants must present a Level One Fingerprint Clearance Card to be copied by the advisor or designee. If there is any question about eligibility for licensure or certification, contact the nursing education consultant at the Arizona State Board of Nursing (602.771.7800).

### Health Declaration

It is essential that nursing students be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform bending activities. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement direct patient care. The clinical nursing experience also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting patients’ lives. Students must be able to demonstrate rational and appropriate behavior under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to making application. All students must provide documentation of compliance with all health and safety requirements. Only students in compliance with the mandatory health and safety requirements are permitted to remain enrolled in nursing courses.

### Health and Safety Requirements for the Fast Track Nursing Program:

1. Students must submit a Health and Safety Documentation Checklist verifying completion of all requirements and maintain current status throughout the program.
2. Students must submit the Health Declaration Form signed by a licensed health care provider.
3. Students must test negative on a timed urine drug screen.
4. Admission to a nursing program requires that students be in compliance with the Maricopa County Community College District Supplemental Background Check policy. Program applications will not be accepted without a copy of an Arizona Department of Public Safety Level One Fingerprint Clearance Card. Upon conditional program admission, the student must comply with all requirements of the current MCCCD background check policy.

It is essential that nursing students be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform

### Required Courses

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>NUC108</td>
<td>Structured Diagnostic Medical Imaging Skills Enhancement</td>
<td>0-1</td>
</tr>
<tr>
<td>NUC114</td>
<td>Nuclear Medicine Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>NUC116</td>
<td>Nuclear Medicine Procedures I</td>
<td>3</td>
</tr>
<tr>
<td>NUC124</td>
<td>Clinical Practicum I</td>
<td>3</td>
</tr>
<tr>
<td>NUC200</td>
<td>Sectional Anatomy for Nuclear Medicine</td>
<td>3</td>
</tr>
<tr>
<td>NUC212</td>
<td>Professionalism and Patient Care</td>
<td>1.5</td>
</tr>
<tr>
<td>NUC220</td>
<td>Clinical Practicum I</td>
<td>3</td>
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<tr>
<td>NUC223</td>
<td>Nuclear Medicine Image Evaluation I</td>
<td>1</td>
</tr>
<tr>
<td>NUC232</td>
<td>Clinical Practicum III</td>
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</tr>
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<td>NUC234</td>
<td>Nuclear Medicine Department Administration</td>
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<td>NUC242</td>
<td>Clinical Practicum IV</td>
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<td>NUC249</td>
<td>Nuclear Medicine Image Evaluation IV</td>
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</tr>
<tr>
<td>NUC244</td>
<td>Nuclear Medicine Radiopharmacy</td>
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</tr>
<tr>
<td>NUC250</td>
<td>Fundamentals of Computed Tomography</td>
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<td>NUC260</td>
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<td>NUC276</td>
<td>Nuclear Cardiology I</td>
<td>3</td>
</tr>
<tr>
<td>NUC280</td>
<td>Nuclear Medicine PET Physics and Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>NUC283</td>
<td>PET/CT Practicum I</td>
<td>1.5</td>
</tr>
<tr>
<td>NUC290</td>
<td>Nuclear Medicine Seminar</td>
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</tbody>
</table>

### Restricted Electives

Students interested in more cardiac clinical experience may complete zero (0) to one (1) credit with permission of the Nuclear Medicine Program Director.

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<td>Structured Diagnostic Medical Imaging Skills Enhancement</td>
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</table>

### General Education Requirement

Any approved general education course from the Humanities, Arts and Design area 2-3

Any approved general education course from the Social-Behavioral Sciences area 3

### Certificate & Degree Programs 2019-2020

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DMI105</td>
<td>Fundamentals of Radiation Physics (3) OR</td>
<td>3-8</td>
</tr>
<tr>
<td>PHY101</td>
<td>Introduction to Physics (4) OR</td>
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</tr>
<tr>
<td>PHY111</td>
<td>General Physics I (4) AND</td>
<td></td>
</tr>
<tr>
<td>PHY112</td>
<td>General Physics II (4)</td>
<td></td>
</tr>
</tbody>
</table>

* Indicates course has prerequisites and/or co-requisites.

** Indicates any module suffixed courses.
Arizona State Board of Nursing.

The Certificate of Completion (CCL) in Nurse Assisting prepares students for entry-level employment in various health care settings as a nursing assistant. The program combines classroom instruction with clinical laboratory, skilled care and acute care experiences. Students who complete the program are eligible to take a written and practical certification examination and work as a Certified Nurse Assistant. Licensing requirements are the exclusive responsibility of the Arizona State Board of Nursing.

**Program Notes:**
Students must earn a grade of C or better in all courses within the program. + indicates course has prerequisites and/or corequisites.

**Admission Criteria:**
1. Application and acceptance into Fast-Track Practical Nursing Program.
2. Documentation of Health and Safety Requirements.
3. Fingerprint Clearance Card.
4. High school diploma or G.E.D. is required. Applicants must signify that they meet this requirement by providing high school diploma/transcripts or GED completion OR by signing the nursing application page containing the ‘Declaration of High School Graduation or GED completion.’ In some instances, high school diploma/transcripts or proof of GED completion may be required.

**Program Prerequisites**
- Current Certified Nurse Assistant (CNA) (9) OR Licensed Nurse Assistant (LNA) (6) OR NUR158+ Nurse Assisting (6) OR Equivalent (0-6) OR Waived by the Nursing Program Director for military veterans demonstrating equivalent work experience... 0-6

**Waived by the Nursing Program Director**
- Waived by the Nursing Program Director
- 0-6

**Required Courses**
- NUR160PN+ Practical Nursing Theory and Science I...........................................................................11
- NUR180PN+ Practical Nursing Theory and Science II (11) OR NUR150+ Practical Nurse Bridge Course (12)............................................................................................11-12

**Waiver of Licensure/Certification Guarantee:**
Admission or completion from the MCCD Nurse Assisting Program does not guarantee obtaining a license or certificate to practice nursing. Licensure and certification requirements and the subsequent procedures are the exclusive right and responsibility of the Arizona State Board of Nursing. Students must satisfy the requirements of the Nurse Practice Act: Statutes, Rules and Regulations, independently of any college of school requirements for graduation.

Pursuant to A.R.S. § 32-1606(B)(17), an applicant for professional or practical nurse license by examination is not eligible for licensure if the applicant has any felony convictions and has not received an absolute discharge from the sentences for all felony convictions. The absolute discharge must be received five or more years before submitting this application. If you cannot prove that the absolute discharge date is five or more years, the Board cannot process your application.

All nurse assistant applicants for certification will be fingerprinted to permit the Department of Public Safety to obtain state and federal criminal history information. All applicants with a positive history are investigated. If there is any question about eligibility for licensure or certification, contact the nursing education consultant at the Arizona State Board of Nursing (602-899-5150).

**Health Declaration:**
It is essential that Nursing students be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform bending activities. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement direct patient care. The clinical nursing experience also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting patients’ lives. Students must be able to demonstrate rational and appropriate behavior under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to making application.

**Health & Safety Requirements for MCCD Nurse Assisting Program:**
1. Students must submit a completed Health and Safety Documentation Checklist and maintain current status throughout the program.
2. Students must submit CPR card for Health Care Provider and maintain current status throughout the program.
3. Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Supplemental Background Check policy. Program applications will not be accepted without a copy of an Arizona Department of Public Safety Level One Fingerprint Clearance Card. Upon conditional program admission, the student must comply with all requirements of the current MCCCD background check policy.
4. Health Provider Signature Form signed by a licensed health care provider.
5. Negative urine drug screen.

**Grade Requirements:**
- Student must obtain a C grade or better in all courses.

**University Transfer Students:**
For students planning a University Program Students who are planning to earn the Bachelor of Science in Nursing may obtain their prerequisite courses at Maricopa Community Colleges. For information on courses that meet requirements for admission into a baccalaureate program, please contact a program advisor.
bending activities. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement direct patient care. The clinical nursing experience also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting patients’ lives. Students must be able to demonstrate rational and appropriate behavior under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to making application. All students must provide documentation of compliance with all health and safety requirements. Only students in compliance with the mandatory health and safety requirements are permitted to remain enrolled in nursing courses.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or corequisites.

Admission Criteria:
1. Application and acceptance into Fast-Track Practical Nursing Program.
2. Documentation of Health and Safety Requirements.
3. Fingerprint Clearance Card.
4. Current Certified Nurse Assistant (CNA) (0) OR Licensed Nurse Assistant (LNA) (0) OR NUR158+ Nurse Assisting (6) OR Equivalent (0-6) OR Waived by the Nursing Program Director for military veterans demonstrating equivalent work experience..................................................0-6

Required Courses ............................................................................................................................................... 22-23
NUR160PN+ Practical Nursing Theory and Science I..............................................................11
NUR180PN+ Practical Nursing Theory and Science II (11) OR NUR150+ Practical Nurse Bridge Course (12)..............................................................11-12

NURSING: MARICOPA
NURSE ASSISTING
CERTIFICATE OF COMPLETION IN NURSE ASSISTING
(2-6 CREDITS; CODE 5963N)
To qualify, students must earn a grade of C or better in all courses or within the program.
Division: Nursing
Program Director: Kristen Woods

The Certificate of Completion (CCL) in Nurse Assisting prepares students for entry-level employment in various health care settings as a nursing assistant. The program combines classroom instruction with clinical laboratory, skilled care and acute care experiences. Students who complete the program are eligible to take a written and practical certification examination and work as a Certified Nursing Assistant. Licensing requirements are the exclusive responsibility of the Arizona State Board of Nursing.

Certificate & Degree Programs 2019-2020

The MCCD Nurse Assisting Program is approved by the Arizona State Board of Nursing.

Program offerings:
This program is offered at the following sites:
- Estrella Mountain Community College
- GateWay Community College
- Glendale Community College
- Mesa Community College
- Mesa Community College/Boswell
- Paradise Valley Community College

Waiver of Licensure/Certification Guarantee:
Admission or completion from the MCCD Nurse Assisting Program does not guarantee obtaining a license or certificate to practice nursing. Licensure and certification requirements and the subsequent procedures are the exclusive right and responsibility of the Arizona State Board of Nursing. Students must satisfy the requirements of the Nurse Practice Act: Statutes, Rules and Regulations, independently of any college of school requirements for graduation.

Pursuant to A.R.S. § 32-1606(B)(17), an applicant for professional or practical nurse license by examination is not eligible for licensure if the applicant has any felony convictions and has not received an absolute discharge from the consequences for all felony convictions. The absolute discharge must be received five or more years before submitting this application. If you cannot prove that the absolute discharge date is five or more years, the Board cannot process your application.

All nurse assistant applicants for certification will be fingerprinted to permit the Department of Public Safety to obtain state and federal criminal history information. All applicants with a positive history are investigated. If there is any question about eligibility for licensure or certification, contact the nursing education consultant at the Arizona State Board of Nursing (602-899-5150).

Health Declaration:
It is essential that Nursing students be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform bending activities. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement direct patient care. The clinical nursing experience also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting patients’ lives. Students must be able to demonstrate rational and appropriate behavior under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to making application.

Health & Safety Requirements for MCCD Nurse Assisting Program:
1. Students must submit a completed Health and Safety Documentation Checklist and maintain current status throughout the program.
2. Students must submit CPR card for Health Care Provider and maintain current status throughout the program.
3. Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Supplemental Background Check policy. Program applications will not be accepted without a copy of an Arizona Department of Public Safety Level One Fingerprint Clearance Card. Upon conditional program admission, the student must comply with all requirements of the current MCCCD background check policy.
4. Health Provider Signature Form signed by a licensed health care provider.
5. Negative urine drug screen.

Grade Requirements:
Student must obtain a C grade or better in all courses.

University Transfer Students:
For students planning a University Program
Students who are planning to earn the Bachelor of Science in Nursing may obtain their prerequisite courses at Maricopa Community Colleges. For information on courses that meet requirements for admission into a baccalaureate program, please contact a program advisor.
THE NURSE ASSISTING PATHWAY:
The nurse assisting pathway is designed to prepare students to complete the Nurse Assistant Certification through the Arizona State Board of Nursing in practice to a healthcare agency as a certified nurse assistant. Completion of the nurse assisting program of study provides job ready skills as a nursing assistant. Students may apply to the Nursing Program after completing the prerequisite courses and admission requirements.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
This program is not eligible for Title IV Federal Financial Aid.
+ indicates course has prerequisites and/or corequisites.
++ Indicates any module suffixed courses.

Admission Criteria:
1. Application and acceptance into the program, high school graduate or GED, current Health Care Provider CPR Card required before beginning courses.
2. Students must submit a copy of a fingerprint clearance card with their application for the Maricopa Community College District Nursing Program.

Program Prerequisites: None

Required Courses ................................................................................................................................................... 2-6
NUR158+ Nurse Assisting (6) OR Advanced Placement courses:
NCE150+ Basic Certified Nursing Assistant (1) AND NCE151+ Basic Certified Nursing Assistant Lab (1) ............................................................................................................. 2-6

NURSING: MARICOPANURSING
NURSING REFRESHER
CERTIFICATE OF COMPLETION IN NURSING REFRESHER
(10 CREDITS; CODE 5739N)
To qualify, students must earn a grade of C or better in all courses or within the program.
Division: Nursing
Program Director: Jeanette Peterson

The Certificate of Completion (CCL) in Nursing Refresher program provides registered nurses with a review and update of nursing theory and practice. The goal of the program is to update and refine theoretical and practical nursing knowledge and facilitate the nurse's transition back into professional practice. The Nursing Refresher program is approved by the Arizona State Board of Nursing. Successful program completion satisfies the Arizona State Board of Nursing RN license renewal requirement for applicants who do not meet the practice mandate as stated in The Nurse Practice Act, R4-19312 (B).

Health Declaration: It is essential that Nursing Refresher students be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform bending activities. The clinical nursing experience also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting patients’ lives. Students must be able to demonstrate rational and appropriate behavior under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to making application.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
This program is not eligible for Title IV Federal Financial Aid.

Massachusetts Nurse of the Future Core Competencies are integrated into the student learning outcomes/program competencies.

Course Fee Information: Please see class schedule for information regarding course fees.

Admission Criteria:
1. Formal application and admission to the program is required.
2. All applicants must have an active or inactive Registered Nurse (RN) license that is eligible for renewal per Regulatory Board requirements or have successfully passed the RN licensing examination, but have never worked as a registered nurse.
3. All applicants must be eligible for issuance of an active or temporary registered nurse license.
4. All applicants must be in good standing with the Regulatory Board. RNs with restricted licenses are not eligible for the program. Once enrolled, students receiving any disciplinary actions against their license must notify the Nursing Program Chair within five (5) school days. The Nursing Program Chair reserves the right to restrict the student's participation in clinical experiences and involvement in patient care until the license is valid and unrestriced.

Health and Safety Requirements for the Nursing Refresher Program:
1. Students must submit a Health and Safety Documentation verifying completion of all requirements and maintain current status throughout the program.
2. Students must submit the Health Declaration Form signed by a licensed health care provider.
3. Students must test negative on a timed urine drug screen.
4. Students must provide a copy of their current and valid Level One Finger Print Clearance Card upon application.

Required Courses ................................................................................................................................................... 10
NUR295 Registered Nurse Refresher............................................................................................................. 10

NURSING: MARICOPANURSING
ASSOCIATE OF APPLIED SCIENCE IN NURSING
(62-75 CREDITS; CODE 3812)
To qualify, students must earn a grade of C or better in all courses or within the program.
Division: Nursing
Program Chair: Margi Schultz

The Associate in Applied Science (AAS) in Nursing Program is available at eight of the Maricopa Community Colleges. Clinical experiences are provided in a variety of healthcare settings. Nursing Program graduates are eligible to apply for the national exam for the registered nurse license. Licensing requirements are the exclusive responsibility of the State Board of Nursing.

The Associate in Applied Science (AAS) Nursing Program is approved by the Arizona State Board of Nursing and accredited by the Accreditation Commission for Education in Nursing (ACEN). 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326; (404) 975.5000; email: info@acennursing.org.

Program offerings:
This program is offered at the following sites:
Chandler-Gilbert Community College
Estrella Mountain Community College
GateWay Community College
Glendale Community College
Mesa Community College
Paradise Valley Community College
Phoenix College
Scottsdale Community College

+ Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.
THE NURSE ASSISTING PATHWAY:
The nurse assisting pathway is designed to prepare students to complete the Nurse Assistant Certification through the Arizona State Board of Nursing to practice in a health care agency as a certified nurse assistant. Completion of the nurse assistant program of study provides job ready skills as a nursing assistant. Students may apply to the Nursing Program after completing the prerequisite courses and admission requirements.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
This program is not eligible for Title IV Federal Financial Aid.
+ indicates course has prerequisites and/or corequisites.
++ Indicates any module suffixed courses.

Admission Criteria:
1. Application and acceptance into the program, high school graduate or GED, current Health Care Provider CPR Card required before beginning courses.
2. Students must submit a copy of a fingerprint clearance card with their application for the Maricopa Community College District Nursing Program.

Program Prerequisites: None

Required Courses ................................................................................................................................................... 2-6
NUR158+ Nurse Assisting (6) OR
NCE150+ Basic Certified Nursing Assistant Lab (1) AND
NCE151+ Basic Certified Nursing Assistant (1) AND

This program is not eligible for Title IV Federal Financial Aid.
Students must earn a grade of C or better for all courses within the program.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
This program is not eligible for Title IV Federal Financial Aid.
+ Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.

NURSING: MARICOPA
NURSING REFRESHER
CERTIFICATE OF COMPLETION IN NURSING REFRESHER
(10 CREDITS; CODE 5739N)
To qualify, students must earn a grade of C or better in all courses or within the program.
Division: Nursing
Program Director: Jeanette Peterson

The Certificate of Completion (CCL) in Nursing Refresher program provides registered nurses with a review and update of nursing theory and practice. The goal of the program is to update and refine theoretical and practical nursing knowledge and facilitate the nurse’s transition back into professional practice. The Nursing Refresher program is approved by the Arizona State Board of Nursing. Successful program completion satisfies the Arizona State Board of Nursing RN license renewal requirement for applicants who do not meet the practice mandate as stated in The Nurse Practice Act, R4-19312 (B).

Health Declaration Form: It is essential that Nursing Refresher students be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform bending activities. The clinical nursing experience also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting patients’ lives. Students must be able to demonstrate rational and appropriate behavior under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to making application.

Program Notes:
Students must earn a grade of C or better for all courses within the program.
This program is not eligible for Title IV Federal Financial Aid.
Massachusetts Nurse of the Future Core Competencies are integrated into the student learning outcomes/program competencies.

NURSING: MARICOPA
NURSING (REGISTERED NURSE)
ASSOCIATE OF APPLIED SCIENCE IN NURSING
(62-75 CREDITS; CODE 3812)
To qualify, students must earn a grade of C or better in all courses or within the program.
Division: Nursing
Program Chair: Margi Schultz

The Associate in Applied Science (AAS) in Nursing Program is available at eight of the Maricopa Community Colleges. Clinical experiences are provided in a variety of healthcare settings. Nursing Program graduates are eligible to apply for the national exam for the registered nurse license. Licensing requirements are the exclusive responsibility of the State Board of Nursing.

The Associate in Applied Science (AAS) Nursing Program is approved by the Arizona State Board of Nursing and accredited by the Accreditation Commission for Education in Nursing (ACEN), 3343 Peachtree Road NE, Suite 850, Atlanta, GA 30326; (404) 975.5000; email: info@acenursing.org.

Program offerings:
This program is offered at the following sites:
Chandler-Gilbert Community College
Estrella Mountain Community College
GateWay Community College
Glendale Community College
Mesa Community College
Paradise Valley Community College
Phoenix College
Scottsdale Community College

Course Fee Information: Please see class schedule for information regarding course fees.

Admission Criteria:
1. Formal application and admission to the program is required.
2. All applicants must have an active or inactive Registered Nurse (RN) license that is eligible for renewal per Regulatory Board requirements or have successfully passed the RN licensing examination, but have never worked as a registered nurse.
3. All applicants must be eligible for issuance of an active or temporary registered nurse license.
4. All applicants must be in good standing with the Regulatory Board. RNs with restricted licenses are not eligible for the program. Once enrolled, students receiving any disciplinary actions against their license must notify the Nursing Program Chair within five (5) school days. The Nursing Program Chair reserves the right to restrict the student's participation in clinical experiences and involvement in patient care until the license is valid and unrestricted.

Health and Safety Requirements for the Nursing Refresher Program:
1. Students must submit a Health and Safety Documentation verifying completion of all requirements and maintain current status throughout the program.
2. Students must submit the Health Declaration Form signed by a licensed health care provider.
3. Students must test negative on a timed urine drug screen.
4. Students must provide a copy of their current and valid Level One Finger Print Clearance Card upon application.

Required Courses .................................................................................................................................................... 10
NUR295 Registered Nurse Refresher.................................................................................................................. 10

Course Fee Information: Please see class schedule for information regarding course fees.

Admission Criteria:
1. Formal application and admission to the program is required.
2. All applicants must have an active or inactive Registered Nurse (RN) license that is eligible for renewal per Regulatory Board requirements or have successfully passed the RN licensing examination, but have never worked as a registered nurse.
3. All applicants must be eligible for issuance of an active or temporary registered nurse license.
4. All applicants must be in good standing with the Regulatory Board. RNs with restricted licenses are not eligible for the program. Once enrolled, students receiving any disciplinary actions against their license must notify the Nursing Program Chair within five (5) school days. The Nursing Program Chair reserves the right to restrict the student's participation in clinical experiences and involvement in patient care until the license is valid and unrestricted.

Health and Safety Requirements for the Nursing Refresher Program:
1. Students must submit a Health and Safety Documentation verifying completion of all requirements and maintain current status throughout the program.
2. Students must submit the Health Declaration Form signed by a licensed health care provider.
3. Students must test negative on a timed urine drug screen.
4. Students must provide a copy of their current and valid Level One Finger Print Clearance Card upon application.

Required Courses .................................................................................................................................................... 10
NUR295 Registered Nurse Refresher.................................................................................................................. 10
Waiver of Licensure/Certification Guarantee:
Admission or graduation from the Nursing Program does not guarantee obtaining a license to practice nursing. Licensure requirements and the subsequent procedures are the exclusive right and responsibility of the Arizona State Board of Nursing. Students must satisfy the requirements of the Nurse Practice Act: Statutes, Rules and Regulations, independently of any college or school requirements for graduation.

Pursuant to A.R.S. 32-1606(E)(17), an applicant for professional or practical nurse license by examination is not eligible for licensure if the applicant has any felony convictions and has not received an absolute discharge from the sentences for all felony convictions. The absolute discharge must be received five or more years before submitting this application. If you cannot prove that the absolute discharge date is five or more years, the Board cannot process your application.

Level One Fingerprint Clearance is required for admission into the program. Applicants must present a Level One Fingerprint Clearance Card to be copied by the advisor or designee. For a Department of Public Safety Fingerprint Clearance Card application, contact MCCCD Healthcare/Nursing Advisor. If there is any question about eligibility for licensure or certification, contact the nursing education consultant at the Arizona State Board of Nursing (602.771.7800).

Health Declaration:
It is essential that nursing students be able to perform a number of physical activities in the clinical portion of the program. At a minimum, students will be required to lift patients, stand for several hours at a time and perform bending activities. Students who have a chronic illness or condition must be maintained on current treatment and be able to implement direct patient care. The clinical nursing experience also places students under considerable mental and emotional stress as they undertake responsibilities and duties impacting patients’ lives. Students must be able to demonstrate rational and appropriate behavior under stressful conditions. Individuals should give careful consideration to the mental and physical demands of the program prior to making application. All must provide documentation of compliance with all health and safety requirements required to protect patient safety. Only students in compliance are permitted to enroll in nursing courses. Students will meet these requirements by providing the required documentation for the Health/Safety Requirements Documentation Checklist and the signed Health Declaration Form.

Health and Safety Requirements for the Maricopa Nursing Program:
1. Students must submit a Health and Safety Documentation Checklist verifying completion of all requirements and maintain current status throughout the program.
2. Students must submit the Health Declaration Form signed by a licensed health care provider.
3. Students must test negative on a timed urine drug screen.
4. Admission to an Allied Health program requires that students be in compliance with the Maricopa Community College District Supplemental Background Check policy. Program applications will not be accepted without a copy of an Arizona Department of Public Safety Level One Fingerprint Clearance Card. Upon conditional program admission, the student must comply with all requirements of the current MCCCD background check policy.

University Transfer Students:
Students who are planning to earn the Bachelor of Science in Nursing may obtain their prerequisite courses at the Maricopa Community Colleges. For information on courses that meet requirements for admission into a baccalaureate program, please contact a program advisor.

REGISTERED NURSE PATHWAY
Associate in Applied Science Degree in Nursing Program
The Associate in Applied Science (AAS) degree in Nursing graduate is eligible to apply for licensure as a Registered Nurse (RN). The RN is educated as a generalist who delivers health care to clients and family groups and has competencies related to the art and science of nursing. The RN may be employed in a variety of acute, long term, and community-based healthcare settings. The AAS degree in Nursing provides the graduate with an educational foundation for articulation into the university setting.

Program Notes:
Students must earn a grade of C or better in all courses required within the program.
* Indicates course has prerequisites and/or corequisites.
** Indicates any module suffixed courses.

Certificate & Degree Programs 2019-2020
Course Fee Information:
Please see class schedule for information regarding course fees.

Maricopa Nursing is aligned with Nurse of the Future Competencies: Patient-Centered Care, Professionalism, Leadership, Systems-Based Practice, Informatics and Technology, Communication, Teamwork and Collaboration, Safety, Quality Improvement, and Evidence-Based Practice. These competencies focus on key stakeholders of healthcare clients, colleagues and communities. Demonstration of the competencies will signify preparation for successful transition into nursing practice and further professional development.

Admission Criteria:
1. High school diploma or GED is required for the Associate in Applied Science degree in Nursing. Applicants must signify that they meet this requirement by providing high school diploma/transcripts or GED completion OR by signing the nursing application page containing the ‘Declaration of High School Graduation or GED completion.’ In some instances, high school diploma/transcripts or proof of GED completion may be required.
2. Formal application and admission to the program is required; all program prerequisites must be completed prior to submission of application.
3. A passing score on a nursing program admission test is required to complete an application.
4. Applicants for Advanced Placement must receive a passing score on a practical nursing content exam for placement into Block 3.
5. The final decision rests with the Nursing Program Chair at the College to which the student is accepted.
6. The Nursing Program Chair reserves the right to deny acceptance of an admission application if the applicant was previously dismissed for issues relating to academic integrity, unsafe patient care, and/or two (2) or more failures from any nursing program.
7. All applicants holding or receiving a certificate as a Nursing Assisting and/or license as a Practical Nurse must remain in good standing with the Regulatory Board. Once enrolled, students receiving any disciplinary actions against their certificate or license must notify the Nursing Program Chair within five (5) school days. The Nursing Program Chair reserves the right to restrict the student’s participation in clinical experiences and involvement in patient care until the certificate and/or license is valid and unrestricted.

Program Prerequisites:.................................................................................................................................10-20

The credit-hour range is subject to change depending on the student's educational experience

Bio156+ General Biology (Majors) I (4) OR
Bio156+ Introductory Biology for Allied Health (4) OR
Bio156+ One year of high school biology ................................................................. 0-4
Bio201+ Human Anatomy and Physiology I ............................................................... 4
CHM130+ Fundamental Chemistry (3) AND
CHM130+ Fundamental Chemistry Laboratory (1) OR
CHM130L+ One year of high school chemistry ......................................................... 0-4
ENG101+ First-Year Composition (3) OR
ENG101+ First-Year Composition for ESL (3) .......................................................... 3
MAT140+ College Mathematics (3) OR
MAT140+ College Mathematics (5) OR
MAT141+ College Mathematics (3) OR
MAT141+ College Mathematics (4) OR
MAT142+ College Mathematics (3) OR
MAT142+ Satisfactory completion of higher level mathematics course .................. 3-5

Students that are admitted into the Maricopa Nursing Program for Fall 2015 and Spring 2016, AND completed MAT141/122 prior to Fall 2015 as an admission requirement, may complete the program without completing MAT140/141/142 as a graduation requirement, by waiver of the program director.
Health and Safety Requirements for the Maricopa Nursing Program:

- Requirements Documentation Checklist and the signed Health Declaration Form.
- Students must meet these requirements by providing the required documentation for the Health/Safety requirements required to protect patient safety. Only students in compliance are permitted to enroll in nursing courses. Students will meet these requirements by providing the required documentation for the Health/Safety Requirements Documentation Checklist and the signed Health Declaration Form.

Health and Safety Requirements for the Maricopa Nursing Program:

1. Students must submit a Health and Safety Documentation Checklist verifying completion of all requirements and maintain current status throughout the program.
2. Students must submit the Health Declaration Form signed by a licensed health care provider.
3. Students must test negative on a timed urine drug screen.
4. Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Supplemental Background Check policy. Program applications will not be accepted without a copy of an Arizona Department of Public Safety Level One Fingerprint Clearance Card. Upon conditional program admission, the student must comply with all requirements of the current MCCCD background check policy.

University Transfer Students:

Students who are planning to earn the Bachelor of Science in Nursing may obtain their prerequisite courses at the Maricopa Community Colleges. For information on courses that meet requirements for admission into a baccalaureate program, please contact a program advisor.

REGISTERED NURSE PATHWAY

Associate in Applied Science Degree in Nursing Program

The Associate in Applied Science (AAS) degree in Nursing graduate is eligible to apply for licensure as a Registered Nurse (RN). The RN is educated as a generalist who delivers health care to clients and family groups and has competencies related to the art and science of nursing. The RN may be employed in a variety of acute, long term, and community-based healthcare settings. The AAS degree in Nursing provides the graduate with an educational foundation for articulation into the university setting.

Program Notes:

Students must earn a grade of C or better in all courses required within the program.

Course Fee Information:

Please see class schedule for information regarding course fees.

Maricopa Nursing is aligned with Nurse of the Future Competencies: Patient-Centered Care, Professionalism, Leadership, Systems-Based Practice, Informatics and Technology, Communication, Teamwork and Collaboration, Safety, Quality Improvement, and Evidence-Based Practice. These competencies focus on key stakeholders of healthcare clients, colleagues and communities. Demonstration of the competencies will signify preparation for successful transition into nursing practice and further professional development.

Admission Criteria:

1. High school diploma or GED is required for the Associate in Applied Science degree in Nursing. Applicants must signify that they meet this requirement by providing high school diploma/transcripts or GED completion OR by signing the nursing application page containing the 'Declaration of High School Graduation or GED completion.' In some instances, high school diploma/transcripts or proof of GED completion may be required.
2. Formal application and admission to the program is required; all program prerequisites must be completed prior to submission of application.
3. A passing score on a nursing program admission test is required to complete an application.
4. Applicants for Advanced Placement must receive a passing score on a practical nursing content exam for placement into Block 3.
5. The final decision rests with the Nursing Program Chair at the College to which the student is accepted.
6. The Nursing Program Chair reserves the right to deny acceptance of an admission application if the applicant was previously dismissed for issues relating to academic integrity, unsafe patient care, and/or two (2) or more failures from any nursing program.
7. All applicants holding or receiving a certificate as a Nursing Assisting and/or license as a Practical Nurse must remain in good standing with the Regulatory Board. Once enrolled, students receiving any disciplinary actions against their certificate or license must notify the Nursing Program Chair within five (5) school days. The Nursing Program Chair reserves the right to restrict the student’s participation in clinical experiences and involvement in patient care until the certificate and/or license is valid and unrestricted.

Program Prerequisites: 3-5

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIO156+</td>
<td>Introductory Biology for Allied Health</td>
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<tr>
<td>BIO156+</td>
<td>General Biology (Majors)</td>
<td>4</td>
</tr>
<tr>
<td>CHM130+</td>
<td>Fundamental Chemistry (3) AND</td>
<td>4</td>
</tr>
<tr>
<td>CHM130+</td>
<td>Fundamental Chemistry Laboratory (1)</td>
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<td>ENG101+</td>
<td>First-Year Composition</td>
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</tr>
<tr>
<td>ENG101+</td>
<td>First-Year Composition for ESL</td>
<td>3</td>
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<tr>
<td>MAT140+</td>
<td>College Mathematics (5)</td>
<td>5</td>
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<td>MAT141+</td>
<td>College Mathematics (4)</td>
<td>4</td>
</tr>
<tr>
<td>MAT142+</td>
<td>College Mathematics (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>MAT142+</td>
<td>Satisfactory completion of higher level mathematics course</td>
<td>3</td>
</tr>
</tbody>
</table>

Students that are admitted into the Maricopa Nursing Program for Fall 2015 and Spring 2016, AND completed MAT201/202/122 prior to Fall 2015 as an admission requirement, may complete the program without completing MAT140/141/142 as a graduation requirement, by waiver of the program director.
Certificate & Degree Programs 2019-2020

Required Courses ................................................................. 36
NUR152+ Nursing Theory and Science I ........................................... 9
NUR172+ Nursing Theory and Science II ........................................... 9
NUR252+ Nursing Theory and Science III .......................................... 9
NUR283+ Nursing Theory and Science IV .......................................... 9

General Education Requirement ........................................................................ 16-19

Three (3) credits of First Year Composition are met by ENG101 or ENG107 in Program Prerequisites area.
ENG102+ First-Year Composition (3) OR
ENG108+ First-Year Composition for ESL (3) ........................................ 3
CRE101+ College Critical Reading and Critical Thinking (3) OR
Equivalent as indicated by assessment (0) .................................................. 0-3

Any approved general education course from the Humanities, Arts and Design area ......................... 2
PSY101 Introduction to Psychology ....................................................... 3
BIO202+ Human Anatomy and Physiology II (4) AND
BIO205+ Microbiology (4) .................................................................... 8

+ Indicates course has prerequisites and co-requisites.
++ Indicates any module suffixed courses.
### Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>NUR152+</td>
<td>9</td>
</tr>
<tr>
<td>NUR172+</td>
<td>9</td>
</tr>
<tr>
<td>NUR252+</td>
<td>9</td>
</tr>
<tr>
<td>NUR283+</td>
<td>9</td>
</tr>
</tbody>
</table>

### General Education Requirement

- Three (3) credits of First Year Composition are met by ENG101 or ENG107 in Program Prerequisites area.
- ENG102+ First-Year Composition (3) OR ENG108+ First-Year Composition for ESL (3)........... 3
- CRE101+ College Critical Reading and Critical Thinking (3) OR Equivalent as indicated by assessment (0).......................... 0-3
- Any approved general education course from the Humanities, Arts and Design area.............. 2
- PSY101 Introduction to Psychology ......................................................... 3
- BIO202+ Human Anatomy and Physiology II (4) AND BIO205+ Microbiology (4) ...................... 8
NURSING - OPERATING ROOM NURSING
CERTIFICATE OF COMPLETION IN OPERATING ROOM NURSING
(16 CREDITS; CODE 5338)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Health Sciences
Program Director: Brandy Thompson

The Certificate of Completion (CCL) in Operating Room Nursing program is designed to provide a basic foundation of
knowledge for the registered nurse interested in working in the operating room setting. Based on safety of patient care,
the registered nurse will become knowledgeable of the “Association of Operating Room Nurses (AORN) Standards of
Practice," perform operating room techniques in the scrub and circulator role and gain exposure to the general surgery
arena. The didactic and lab information is provided in a face to face format. Clinical experience will allow the student to
gain experience in the scrub and circulating role and learn the circulator's role in caring for the patient in pre-op holding,
the operating room, and post-operative care environments. Post graduation the registered nurse may sit for the Certified
Nurse Operating Room (CNOR) certification, an accredited credentialing program for perioperative registered nurses.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisites and/or corequisites.

Students with other related health care experiences not listed on the following Program Prerequisites options may request
an evaluation for course competency equivalence through the Integrated Competency Assessment Network (ICAN) by calling
480.731.8924.

Admission Criteria:
2. Formal application and admission to the program.
3. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance
   with the Maricopa County Community College District Background Check standards. Upon conditional program
   enrollment, the student must comply with all requirements of the MCCCD background check policy.
4. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must
   comply with all requirements of the MCCCD clinical health and safety policy.
5. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the
   start of classes may result in cancellation of enrollment.

Program Prerequisites: None

Required Courses ........................................................................................................................................................... 16
PON210+ PeriOperative Principles I ............................................................ 3
PON212+ PeriOperative Principles II ......................................................... 3
PON214+ PeriOperative Laboratory ........................................................... 4
PON218+ PeriOperative Clinical Practice I .............................................. 3
PON220+ PeriOperative Clinical Practice II .............................................. 3

+ Indicates course has prerequisites and/or corequisites.
++ Indicates any module suffixed courses.
NURSING - OPERATING ROOM NURSING
CERTIFICATE OF COMPLETION IN OPERATING ROOM NURSING
(16 CREDITS; CODE 5338)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Health Sciences
Program Director: Brandy Thompson

The Certificate of Completion (CCL) in Operating Room Nursing program is designed to provide a basic foundation of knowledge for the registered nurse interested in working in the operating room setting. Based on safety of patient care, the registered nurse will become knowledgeable of the “Association of Operating Room Nurses (AORN) Standards of Practice,” perform operating room techniques in the scrub and circulator role and gain exposure to the general surgery arena. The didactic and lab information is provided in a face to face format. Clinical experience will allow the student to gain experience in the scrub and circulating role and learn the circulator’s role in caring for the patient in pre-op holding, the operating room, and post-operative care environments. Post graduation the registered nurse may sit for the Certified Nurse Operating Room (CNOR) certification, an accredited credentialing program for perioperative registered nurses.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisites and/or corequisites.

Students with other related health care experiences not listed on the following Program Prerequisites options may request an evaluation for course competency equivalence through the Integrated Competency Assessment Network (ICAN) by calling 480.731.8924.

Admission Criteria:
2. Formal application and admission to the program.
3. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
4. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
5. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites: None

Required Courses .................................................................................................................................................... 16
PON210+ PeriOperative Principles I ................................................................................................................ 3
PON212+ PeriOperative Principles II ................................................................................................................. 3
PON214+ PeriOperative Laboratory ..................................................................................................................... 4
PON218+ PeriOperative Clinical Practice I .......................................................................................................... 3
PON220+ PeriOperative Clinical Practice II ........................................................................................................ 3

* Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.
OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE DEGREE IN OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY (63-75 CREDITS; CODE 3762)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: Michael Bryant

The Associate in Applied Science (AAS) in Occupational Safety and Health Technology program is a two-year degree program which is designed to prepare a student professional to manage health and safety programs that comply with Occupational Safety and Health Act (OSHA) standards in a variety of settings. Occupational Safety and Health professionals have specialized knowledge of state and federal rules and regulations and code books that serve as safety guidelines. They identify safety problems and develop programs to apply those rules in specific industrial settings.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
+ indicates course has prerequisites and/or co-requirements.
++ indicates any module suffixed courses.

Admission Criteria:
Satisfactory score on District placement exam testing into MAT090 or MAT091 or MAT092 or higher.

Program Prerequisites: None

Required Courses

- BIO105 Environmental Biology (4) OR
- ENG101+ First-Year Composition (3)
- ENG111+ Technical and Professional Writing (3) OR
- CHM130+ Fundamental Chemistry (3) AND
- CHM130LL+ Fundamental Chemistry Laboratory (1) OR
- CHM151+ General Chemistry I (3) AND
- CHM151LL+ General Chemistry I Laboratory (1) ................................................. 4
- COM230 Small Group Communication ............................................................. 3
- GBS110 Human Relations in Business and Industry (3) OR
- MGT101 Techniques of Supervision (3) ............................................................ 3
- HMT/OSH101 Introduction to Occupational Safety, Health, and Environmental Technology .................................................. 3
- MAT112 Mathematical Concepts and Applications ........................................ 3
- OSH102 Introduction to Industrial Hygiene ..................................................... 3
- OSH106AA Industrial Safety ........................................................................... 3
- OSH107+ Occupational Safety Principles and Practice .................................... 3
- OSH189AA+ Professional Leadership and Development for Occupational Safety and Health I .................................................. 3
- OSH203+ Health and Safety Program Management I ...................................... 3
- OSH204+ Health and Safety Program Management II .................................... 3
- OSH206 Risk Management and Loss Control ................................................. 3
- CRE101+ College Critical Reading and Critical Thinking (3) OR
- Equivalent course OR Satisfactory completion of a higher level mathematics course .................................................. 6-9
- Restricted Electives .......................................................................................... 0-9

Students may select zero (0) to nine (9) credits from the following courses below to obtain an additional skill set or to transfer to the university. Students should consult with the Occupational Health and Safety Program Director.

- OSH189AB+ Professional Leadership and Development for Occupational Safety and Health II .................................. 1
- PPT120 Energy Industry Fundamentals ............................................................ 3
- PPT121 Power Plant Components ................................................................ 3
- SUS100 Introduction to Sustainability ............................................................. 3
- TQM240 Project Management in Quality Organizations ................................ 3

Recommended for students intending to transfer to the university:
MAT150 College Algebra/Functions (5) OR
MAT151 College Algebra/Functions (4) OR
MAT152 College Algebra/Functions (3) OR
Equivalent course OR Satisfactory completion of a higher level mathematics course .................................................. 3-5
# OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY

**ASSOCIATE IN APPLIED SCIENCE DEGREE IN OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY (63-75 CREDITS; CODE 3762)**

To qualify, students must earn a grade of C or better in all courses within the program. The Associate in Applied Science (AAS) in Occupational Safety and Health Technology program is a two-year degree program which is designed to prepare students to manage health and safety programs that comply with Occupational Safety and Health Act (OSHA) standards in a variety of settings. Occupational Safety and Health professionals have specialized knowledge of state and federal rules and regulations and code books that serve as safety guidelines. They identify safety problems and develop programs to apply those rules in specific industrial settings.

**Program Director:** Michael Bryant

Students must earn a grade of C or better in all courses within the program.

+ Indicates course has prerequisites and/or corequisites.
++ Indicates any module suffixed courses.

**Admission Criteria:**

Satisfactory score on District placement exam testing into MAT090 or MAT091 or MAT092 or higher.

**Program Prerequisites:** None

**Required Courses**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BID105</td>
<td>Environmental Biology (4) OR BID160 Introduction to Human Anatomy and Physiology</td>
<td>4</td>
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<tr>
<td>CHM130+</td>
<td>Fundamental Chemistry (3) AND CHM130LL+ Fundamental Chemistry Laboratory (1) OR</td>
<td>4</td>
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<td>CHM151+</td>
<td>General Chemistry I (3) AND CHM151LL+ General Chemistry I Laboratory (1)</td>
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<tr>
<td>COM230</td>
<td>Small Group Communication</td>
<td>3</td>
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<tr>
<td>ENG101+</td>
<td>First-Year Composition (3) AND ENGL111 Technical and Professional Writing (3)</td>
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<td>GBS110</td>
<td>Human Relations in Business and Industry (3) OR MGT101 Techniques of Supervision (3)</td>
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<td>OSH102</td>
<td>Introduction to Industrial Hygiene</td>
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<td>OSH106AA</td>
<td>Industrial Safety</td>
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<td>OSH189AA+</td>
<td>Professional Leadership and Development for Occupational Safety and Health I</td>
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<td>OSH203+</td>
<td>Health and Safety Program Management I</td>
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<tr>
<td>OSH204+</td>
<td>Health and Safety Program Management II</td>
<td>3</td>
</tr>
<tr>
<td>OSH206</td>
<td>Risk Management and Loss Control</td>
<td>3</td>
</tr>
<tr>
<td>OSH218+</td>
<td>Ergonomics</td>
<td>3</td>
</tr>
</tbody>
</table>

**General Education Requirement**

- **6-9 credits**
  - MAT150 College Algebra/Functions (3) OR MAT151 College Algebra/Functions (4) OR MAT152 College Algebra/Functions (3) OR Equivalent course OR Satisfactory completion of a higher level mathematics course
  - SSH111 Sustainable Cities (SSH111 is recommended)

**Restricted Electives**

- **0-9 credits**
  - BLT140 Environmentally Responsible Building
  - BLT263 Building Codes
  - CNS175 Working Drawing Analysis: Blueprint Reading
  - CNS180 Building Construction Methods, Materials, and Equipment
  - ELN101 eLearning Design Level I
  - ELC/FAC/HVA105 Electricity for Industry (3) AND ELC/FAC/HVA105LL Electricity for Industry Lab (1)
  - FPC/HVA301 Codes
  - GLG110 Geological Disasters and the Environment (3) AND GLG111 Geological Disasters and the Environment Lab (1)
  - METT131 Lean Manufacturing
  - MIT120 Industrial Technology Fundamentals
  - OSH169AB+ Professional Leadership and Development for Occupational Safety and Health II
  - OSH270AA Occupational Safety and Health Internship (1) OR OSH270AB+ Occupational Safety and Health Internship (2)
  - OSH270AC+ Occupational Safety and Health Internship (3)
  - OSH290AC+ Case Study and Research Project

Recommended for students intending to transfer to the university:

- **3-5 credits**
  - MAT150 College Algebra/Functions (3) OR MAT151 College Algebra/Functions (4) OR MAT152 College Algebra/Functions (3) OR Equivalent course OR Satisfactory completion of a higher level mathematics course

- **0-3 credits**
  - CRE101+ College Critical Reading and Critical Thinking (3) OR Equivalent by assessment (0)

- **6-9 credits**
  - Any approved general education course from the Humanities, Arts and Design area OR SSH111 Sustainable Cities (SSH111 is recommended)

- **3 credits**
  - Any approved general education course from the Social-Behavioral Sciences area
OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY

CERTIFICATE OF COMPLETION IN OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY
(24-27 CREDITS; CODE 5859)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Industrial Technology
Program Director: Michael Bryant

The Certificate of Completion (CCL) in Occupational Safety and Health Technology program is designed to prepare a safety professional to manage health and safety programs that comply with Occupational Safety and Health Act (OSHA) standards in a variety of settings. Occupational Safety and Health professionals have specialized knowledge of state and federal rules and regulations and code books that serve as safety guidelines. They identify safety problems and develop programs to apply those rules in specific industrial setting.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
++ indicates any course has prerequisites and/or corequisites.
+ indicates any course has prerequisites and/or corequisites.

Program Prerequisites: None

Required Courses ............................................................................................................................................... 21-24
HMT/OSH101 Introduction to Occupational Safety, Health, and Environmental Technology .................. 3
OSH102 Introduction to Industrial Hygiene ................................................................................................. 3
OSH107+ Occupational Safety Principles and Practice ............................................................................. 3
OSH105AA Construction Safety (3) OR
OSH106AA Industrial Safety (3) OR
ORSafety and Environmental Response to Hazardous Spills and Waste ............................................. 3
AND

Track 1: Safety Management: ................................................................................................................................ 12
OSH203+ Health and Safety Program Management I .................................................................................. 3
OSH204+ Health and Safety Program Management II .................................................................................. 3
OSH206 Risk Management and Loss Control ............................................................................................... 3
OSH220+ Facilities Special Systems and Codes (3) OR
FAC/OSH240+ Facilities Special Systems and Codes .................................................................................. 3

OR
Track 2: Safety Professional: .................................................................................................................................. 12
OSH203+ Health and Safety Program Management I .................................................................................. 3
OSH218+ Ergonomics .......................................................................................................................................... 3
OSH220+ Safety and Emergency Management ........................................................................................... 3
OSH230+ Safety and Environmental Response to Hazardous Spills and Waste (3) OR
FAC/OSH240+ Facilities Special Systems and Codes .................................................................................. 3

OR
Track 3: Construction Safety Specialist: .............................................................................................................. 12
OSH113 Urban Workplace Response: First Aid/Cardiopulmonary Resuscitation (1) OR
OSH212+ Electrical Safety Arc Flash (1) ............................................................................................................ 1
OSH203+ Health and Safety Program Management I .................................................................................. 3
OSH213+ Excavation, Trenching and Soil Mechanics ................................................................................... 2
OSH230+ Safety and Environmental Response to Hazardous Spills and Waste ............................................. 3

Program Notes:
Students must select one (1) of the following three (3) tracks:
+ indicates any course has prerequisites and/or corequisites.
++ indicates any course has prerequisites and/or corequisites.

Certification and Degree Programs 2019-2020

OCCUPATIONAL THERAPY ASSISTANT
ASSOCIATE IN APPLIED SCIENCE DEGREE IN OCCUPATIONAL THERAPY ASSISTANT
(66.5-74.5 CREDITS; CODE 3176)

To qualify, students must earn a grade of C or better in all courses required within the program.
Division: Health Sciences
Program Director: Maria Pomeranz

The Associate in Applied Science (AAS) in Occupational Therapy Assistant (OTA) program prepares students to use therapeutic modalities and procedures under the direction and supervision of an occupational therapist. The OTA provides rehabilitative services to people with physical, psycho-social and developmental impairments as well as helps people of all ages regain independence and participate in daily activities. OTAs blend science, creativity, and compassion to help their clients develop skills and strategies to participate fully in meaningful life activities.

Occupational therapy assistants are skilled health care workers who provide direct patient care under the supervision of an occupational therapist (OT). Work locations include but are not limited to rehabilitation centers, home health agencies, schools, skilled nursing facilities, hospitals, and outpatient clinics.

Program graduates will be eligible to take the National Occupational Therapy Certification Examination administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of the examination, graduates are certified as occupational therapy assistants and are eligible to apply for state licensure.

Program Notes:
Students must obtain a C or better in all courses required within the program.
+ indicates any course has prerequisites and/or corequisites.

Students with other related health care experiences not listed on the following program preparatory options may request an evaluation for course competency equivalence for work experience or equivalent education as evaluated by the Gateway Health Care Curriculum Coordinator.

Admission Criteria:
1. Formal application for admission to the program.
2. A one-page essay stating why students wish to become an occupational therapy assistant (OTA) must accompany application. Essay must include information about prior exposure to occupational therapy. Preference is given to those demonstrating experience as an occupational therapy volunteer, observer, or client.
3. Background check requirements: Admission to an Allied Health program requires that students comply with the Maricopa County Community College District Background Check Standards. Upon program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
4. All clinical health and safety requirements must be met prior to program admission.
5. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes will result in cancellation of enrollment.

FAC/OSH240+ Facilities Special Systems and Codes .................................................................................. 3
Restricted Electives ................................................................................................................................................. 3

Students should select three (3) credits from the following courses in consultation with a Program Advisor.

FAC+++++ Any FAC Facilities Management course(s)
IND+++++ Any IND Industry course(s)
OSH+++++ Any OSH Occupational Safety and Health course(s)
WRT++++ Any WRT Water Resource Technology course(s)
OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY
CERTIFICATE OF COMPLETION IN OCCUPATIONAL SAFETY AND HEALTH TECHNOLOGY
(24-27 CREDITS; CODE 5859)

To qualify, students must earn a grade of C or better in all courses within the program.
Program Director: Michael Bryant

The Certificate of Completion (CCL) in Occupational Safety and Health Technology program is designed to prepare a safety professional to manage health and safety programs that comply with Occupational Safety and Health Act (OSHA) standards in a variety of settings. Occupational Safety and Health professionals have specialized knowledge of state and federal rules and regulations and code books that serve as safety guidelines. They identify safety problems and develop programs to apply those rules in specific industrial setting.

Program Notes:
Students must earn a grade of C or better in all courses within the program.
++ indicates any suffixed courses.
+ indicates course has prerequisites and/or co-requisites.

Program Prerequisites: None

Required Courses ................................................................................................................................. 21-24
HMT/OSH101 Introduction to Occupational Safety, Health, and Environmental Technology ............. 3
OSH102 Introduction to Industrial Hygiene ......................................................................................... 3
OSH107+ Occupational Safety Principles and Practice ..................................................................... 3
OSH105AA Construction Safety (3) OR
OSH106AA Industrial Safety (3) OR
Recognized OSHA card (0) ............................................................................................................... 3

AND
Students must select one (1) of the following three (3) tracks:

Track 1: Safety Management: ............................................................................................................. 12
OSH203+ Health and Safety Program Management I ..................................................................... 3
OSH204+ Health and Safety Program Management II .................................................................... 3
OSH206 Risk Management and Loss Control ..................................................................................... 3
OSH220+ Safety and Emergency Management (3) OR
OSH230 Safety and Environmental Response to Hazardous Spills and Waste (3) OR
OSH240+ Facilities Special Systems and Codes (3) ......................................................................... 3

OR

Track 2: Safety Professional: ............................................................................................................. 12
OSH203+ Health and Safety Program Management I ..................................................................... 3
OSH218+ Ergonomics ......................................................................................................................... 3
OSH220+ Safety and Emergency Management .................................................................................. 3
OSH230+ Safety and Environmental Response to Hazardous Spills and Waste (3) OR
OSH500+ Facilities Special Systems and Codes (3) ......................................................................... 3

OR

Track 3: Construction Safety Specialist: ............................................................................................. 12
OSH113 Urban Workplace Response: First Aid/Cardiopulmonary Resuscitation (1) OR
OSH212+ Electrical Safety Arc Flash (1) ............................................................................................ 1
OSH203+ Health and Safety Program Management I ..................................................................... 3
OSH213+ Excavation, Trenching and Soil Mechanics ................................................................. 2
OSH230 Safety and Environmental Response to Hazardous Spills and Waste ............................. 3

Students with other related health care experiences not listed on the following program preparatory options may request an evaluation for course competency equivalence for work experience or equivalent education as evaluated by the Gateway Health Care Curriculum Coordinator.

Admission Criteria:
1. Formal application for admission to the program.
2. A one-page essay stating why student wishes to become an occupational therapy assistant (OTA) must accompany application. Essay must include information about prior exposure to occupational therapy. Preference is given to those demonstrating experience as an occupational therapy volunteer, observer, or client.
3. Background check requirements: Admission to an Allied Health program requires that students comply with the Maricopa County Community College District Background Check Standards. Upon program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
4. All clinical health and safety requirements must be met prior to program admission.
5. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes will result in cancellation of enrollment.

Program Notes:
Students must have a C or better in all courses required within the program.
* indicates course has prerequisites and/or corequisites.
++ indicates any module suffixed courses.

Certificate & Degree Programs 2019-2020

OCCUPATIONAL THERAPY ASSISTANT
ASSOCIATE IN APPLIED SCIENCE DEGREE IN OCCUPATIONAL THERAPY ASSISTANT
(66.5-74.5 CREDITS; CODE 3176)

To qualify, students must earn a grade of C or better in all courses required within the program.
Program Director: Maria Pomerantz

The Associate in Applied Science (AAS) in Occupational Therapy Assistant (OTA) program prepares students to use therapeutic modalities and procedures under the direction and supervision of an occupational therapist. The OTA provides rehabilitative services to people with physical, psycho-social and developmental impairments as well as helps people of all ages regain independence and participate in daily activities. OTAs blend science, creativity, and compassion to help their clients develop skills and strategies to participate fully in meaningful life activities.

Occupational therapy assistants are skilled health care providers who work under the supervision of an occupational therapist (OT). Work locations include but are not limited to rehabilitation centers, home health agencies, schools, skilled nursing facilities, hospitals, and outpatient clinics.

Program graduates will be eligible to take the National Occupational Therapy Certification Examination administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of the examination, graduates are certified as occupational therapy assistants and are eligible to apply for state licensure.

Program Notes:
Students must have a C or better in all courses required within the program.
* indicates course has prerequisites and/or corequisites.

Admission Criteria:
1. Formal application for admission to the program.
2. A one-page essay stating why student wishes to become an occupational therapy assistant (OTA) must accompany application. Essay must include information about prior exposure to occupational therapy. Preference is given to those demonstrating experience as an occupational therapy volunteer, observer, or client.
3. Background check requirements: Admission to an Allied Health program requires that students comply with the Maricopa County Community College District Background Check Standards. Upon program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
4. All clinical health and safety requirements must be met prior to program admission.

Program Notes:
Students must have a C or better in all courses required within the program.
* indicates course has prerequisites and/or corequisites.
++ indicates any module suffixed courses.
7. There are limited spaces available in the OTA program. Only students who have completed all the program prerequisites listed here may have their name added to the queue of those waiting for an available space in a cohort.

Program Prerequisites ........................................................................................................................................ 19-24

BIO201+ Human Anatomy and Physiology I ................................................................................................ 4
BIO202+ Human Anatomy and Physiology II ................................................................................................. 4

CRE101+ College Critical Reading and Critical Thinking (3) OR Equivalent by Assessment on Placement Test (0) ........................................................................................................................................ 0-3

COM100 Introduction to Human Communication (3) OR
COM110 Interpersonal Communication (3) OR
COM230 Small Group Communication (3) ........................................................................................................ 3

ENG101+ First-Year Composition (3) OR
ENG107+ First-Year Composition for ESL (3) .................................................................................................. 3

HCC146 Common Medical Terminology for Health Care Professionals (2) OR Work experience or equivalent education as evaluated by the Gateway Health Core Curriculum Coordinator .............................................................................. 0-2

OTA100 Introduction to Occupational Therapy Assistant Profession ......................................................... 2

PSY101 Introduction to Psychology ................................................................................................................ 3

Required Courses ........................................................................................................................................... 39.5

OTA102+ Psychosocial Health and Occupation ............................................................................................. 3
OTA105+ Fieldwork: Psychosocial ....................................................................................................................... 0.5
OTA107+ Fundamentals of Occupational Therapy .......................................................................................... 3
OTA117+ Physical Health and Occupations ....................................................................................................... 3
OTA157+ Occupational Therapy Assistant in Physical Rehabilitation .............................................................. 3
OTA201+ Assistive Technology ............................................................................................................................ 2
OTA205+ Fieldwork: Geriatric ............................................................................................................................. 0.5
OTA207+ Occupational Therapy Assistant in Geriatrics ............................................................................... 3
OTA215+ Fieldwork: Pediatric I .......................................................................................................................... 0.5
OTA217+ Occupational Therapy Assistant in Pediatrics ................................................................................. 3
OTA234+ Occupational Therapy Assistant Professional Standards ............................................................. 2
OTA255+ Fieldwork: Adult ................................................................................................................................. 4
OTA265+ Fieldwork: Pediatric II ........................................................................................................................ 4
OTA284+ Occupational Therapy Assistant Professional Transition .............................................................. 2

PSY266+ Abnormal Psychology ....................................................................................................................... 3

SOC101+ Introduction to Sociology ................................................................................................................ 3

General Education Requirement ...................................................................................................................... 8-11

Three (3) credits of First Year Composition are met by ENG101 or ENG107 in the Prerequisites area.

ENG102+ First-Year Composition (3) OR
ENG108+ First-Year Composition for ESL (3) .................................................................................................. 3

---

** Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.

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** Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
Program Prerequisites ............................................................................................................................................
7.
6.
5.
4.
3.
2.
1.

There are limited spaces available in the OTA program. Only students who have completed all the program
prerequisites listed here may have their name added to the queue of those waiting for an available space in a
cohort.

Program Prerequisites ............................................................................................................................................

BIO201+ Human Anatomy and Physiology I ................................................................. 4
BIO202+ Human Anatomy and Physiology II ............................................................. 4

CRE101+ College Critical Reading and Critical Thinking (3) OR Equivalent by Assessment on Placement Test (0) ................................................................................................. 0-3

COM100 Introduction to Human Communication (3) OR COM110 Interpersonal Communication (3) OR COM230 Small Group Communication (3) ................................................................. 3

ENG101+ First-Year Composition (3) OR ENG107+ First-Year Composition for ESL (3) ........................................................................................................................................ 3

HCC146 Common Medical Terminology for Health Care Professionals (2) OR Work experience or equivalent education as evaluated by the Gateway Health Core Curriculum Coordinator ....................................................................................... 0-2

OTA100 Introduction to Occupational Therapy Assistant Profession ................................................. 2
PSY101 Introduction to Psychology ........................................................................................................ 3

Required Courses .............................................................................................................................................. 39.5
OTA102+ Psychosocial Health and Occupation ................................................................. 3
OTA105+ Fieldwork: Psychosocial ...................................................................................... 0.5
OTA107+ Fundamentals of Occupational Therapy ............................................................ 3
OTA117+ Physical Health and Occupations ............................................................................... 3
OTA157+ Occupational Therapy Assistant in Physical Rehabilitation ...................................... 3
OTA201+ Assistive Technology ........................................................................................................... 2
OTA205+ Fieldwork: Geriatric ........................................................................................................ 0.5
OTA207+ Occupational Therapy Assistant in Geriatrics ............................................................ 3
OTA215+ Fieldwork: Pediatric I ..................................................................................................... 0.5
OTA217+ Occupational Therapy Assistant in Pediatrics ............................................................ 3
OTA234+ Occupational Therapy Assistant Professional Standards ............................................... 2
OTA255+ Fieldwork: Adult ............................................................................................................ 4
OTA265+ Fieldwork: Pediatric II ............................................................................................... 4
OTA284+ Occupational Therapy Assistant Professional Transition .............................................. 2

PSY266+ Abnormal Psychology ........................................................................................................... 3
SOC101+ Introduction to Sociology .............................................................................................. 3

General Education Requirement ............................................................................................................. B-11

Three (3) credits of First Year Composition are met by ENG101 or ENG107 in the Prerequisites area.

ENG102+ First-Year Composition (3) OR ENG108+ First-Year Composition for ESL (3) ........................................................................................................................................ 3

OPHTHALMIC MEDICAL ASSISTANT ☀

CERTIFICATE OF COMPETENCY IN OPHTHALMIC MEDICAL ASSISTANT
(628 CLOCK HOURS; CODE 1501)
Division: Healthcare
Program Manager: Jennifer Kline

The Ophthalmic Medical Assistant program will serve as the initial education program for learning and understanding
the core level of care for entry into the fascinating world of eye care in a clinical/office setting. The program will focus
on learning how to assist and work with ophthalmologists. Included will be an overview of patient services and even
assisting with minor surgical procedures, instrument care and maintenance. Special attention will be given to complete
comprehensive eye examinations, including chief complaints and history taking, anatomy and physiology of the visual
system, eye terminology, general medical knowledge as well as hands-on skill instruction.

Program Notes

Students will be required to take a randomized urine drug screen and submit a negative result prior to being eligible to partici-
pate in the clinical externship. The expense of the urine drug screen is the student’s responsibility.

Externship hours are site specific and may require attendance any day of the week, including during unscheduled days and times.

The Ophthalmic Medical Assistant program serves as a pathway to excellent job opportunities and a lifelong and challenging
career with the future opportunity of becoming a Certified Ophthalmic Assistant (COA).

Program is financial aid eligible.

Admission Criteria: Admission to the program.

Admission Requirements:
1. 18 years of age to enroll
2. High school diploma or GED
3. Arizona Level One Fingerprint Clearance Card (DPS)
4. Proof of immunizations
5. Healthcare Level CPR Card
6. Healthcare signature form completed
7. MCCCD Supplemental Background Check
8. Accuplacer reading score of 141 or greater or Accuplacer next generation score of 249 or greater, or ACT
   reading score of 22 or greater, or high school GPA of 3.0 or higher (within the last 10 years), or GED reading
   score of 175 or higher, or successful completion of RDG100 or CRE101 with a grade of C or better.
9. Accuplacer for elementary algebra (score of 20 or above) or transcript proof of passing score in class MAT081
   and MAT82 or MAT090.

Required Courses .............................................................................................................................................. 236

ISP108B Keyboarding II ......................................................................................................................... 36
ISP116 Computer Foundations .................................................................................................................. 24

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
Certificate & Degree Programs 2019-2020

OPH100+ Electronic Medical Records ................................................................. 42
OPH101+ Introduction to Eye Care ................................................................. 54
OPH110+ Ocular Medical Terminology, Abbreviations, & Disease Processes ............................................................................................................................................ 42
OPH112+ Clinical Theory and Skills ................................................................. 150
OPH114+ Basic Skills & Ocular Assessment ..................................................... 160
OPH190+ Ophthalmic Assisting Externship ..................................................... 120

Total Program Hours: .................................................................................. 628

PHARMACY TECHNICIAN

CERTIFICATE OF COMPETENCY IN PHARMACY TECHNICIAN
(652 CLOCK HOURS; CODE 1405)
Division: Healthcare
Program Manager: Jennifer Kline

The Certificate of Competency in Pharmacy Technician program meets Pharmacy Technician Certification Board requirements for students to sit for the Pharmacy Technician Certification Exam. Students will learn interpersonal skills and regulatory standards required of pharmacy technicians. Includes roles and responsibilities of the technician in a variety of entry-level pharmacy operations, response to regulatory issues, adherence to quality assurance procedures, patient and medication safety procedures, the procedures for handling of medications and filling medication orders, procurement, billing, reimbursement, inventory management procedures, and use of pharmacy technology and informatics database software.

Program Notes:
Students will be required to take a randomized urine drug screen and submit a negative result prior to be eligible to participate in clinicals. The expense of the urine drug screen is the student’s responsibility. Students are required to complete 24 hours of job shadowing during this course to be eligible for clinical externship. Job shadowing sites are specific and may require hours different than the regular scheduled meeting pattern.

Students are required to complete 200 hours of clinical externship to complete this program. Externship hours are site specific and may require attendance any day of the week, including during unscheduled days and times.

Students are required to apply and maintain an Arizona State Pharmacy Technician Trainee license at the beginning of this program, so it will be received prior to job shadowing.

Graduates are eligible to apply for the National Pharmacy Technician Certification Examination (PTCE).

Program is financial aid eligible.

Program Prerequisites: Program admission.

Admission Requirements:
1. 18 years of age to enroll
2. High school diploma or GED
3. Arizona Level One Fingerprint Clearance Card (DPS)
4. Proof of immunizations
5. Healthcare Level CPR Card
6. Healthcare signature form completed
7. MCCCD Supplemental Background Check
8. Accuplacer reading score of 74 or greater or Accuplacer next generation score of 249 or greater, or ACT reading score of 22 or greater, or high school GPA of 3.0 or higher (within the last 10 years), or GED reading score of 175 or higher, or successful completion of RDG100 or CRE101 with a grade of C or better.

Certificate & Degree Programs 2019-2020

9. Accuplacer for elementary algebra (score of 20 or above) or transcript proof of passing score in class MAT081 and MAT082 or MAT090.
11. Required to sign up and pay for Castle Branch and myClinicalExchange.

Required Courses

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<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISP108B</td>
<td>Keyboarding II</td>
<td>36</td>
</tr>
<tr>
<td>PHC101+</td>
<td>Pharmacology for Pharmacy Technicians</td>
<td>60</td>
</tr>
<tr>
<td>PHC102+</td>
<td>Pharmacy Tech II</td>
<td>120</td>
</tr>
<tr>
<td>PHC102AB+</td>
<td>Pharmacy Tech II</td>
<td>128</td>
</tr>
<tr>
<td>PHC107+</td>
<td>Math and Dosages</td>
<td>90</td>
</tr>
<tr>
<td>PHC122+</td>
<td>Pharmacy Tech Certification Review</td>
<td>18</td>
</tr>
<tr>
<td>PHC114+</td>
<td>Pharmacy Tech Externship</td>
<td>200</td>
</tr>
</tbody>
</table>

Total Program Hours: ........................................................................... 652

PHLEBOTOMY

CERTIFICATE OF COMPETENCY IN PHLEBOTOMY
(300 CLOCK HOURS; 1403N-DAY/1409N-NIGHT)
Division: Healthcare
Program Manager: Jennifer Kline

The Certificate of Competency in Phlebotomy program is designed to prepare a person to obtain blood specimens by skin puncture and venipuncture. The phlebotomist may find employment in hospitals, patient service centers, life insurance companies, doctor’s offices, outreach services, and donor centers. Students in the Phlebotomy program will be in contact with potentially infectious blood, tissues, and body fluids. During this program, eligible students will have the opportunity to take the national certification exam.

Program Notes:
Program is not financial aid eligible.

Students will be required to have a minimum of 30 successful live draws to sit for the national certification examination. Students are provided the opportunity to take this examination prior to going to clinical externship. The expense of the examination is the student’s responsibility.

Students are required to take a randomized urine drug screen and submit a negative result prior to be eligible to participate in clinical externship. The expense of the urine drug screen is the student’s responsibility.

Students are required to complete 120 hours of clinical externship to complete this program. Externship hours are site specific and may require attendance any day of the week, including during unscheduled days and times.

Students must meet all required program competencies in order to receive a passing grade. This program is a P (pass) or Z (no pass) graded program.

Admission Requirements:
1. 18 years of age to enroll
2. Accuplacer Reading score of 74 or greater or Accuplacer Next Generation score of 249 or greater, or ACT Reading score of 22 or greater, or high school GPA of 3.0 or higher (within the last 10 years), or GED Reading score of 175 or higher, or successful completion of RDG100 or CRE101 with a grade of C or better.
3. Completed admission packet
4. Arizona Level One Fingerprint Clearance Card (DPS)
5. Proof of immunizations
6. Healthcare Level CPR Card
7. Healthcare signature form completed

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
PHARMACY TECHNICIAN

CERTIFICATE OF COMPETENCY IN PHARMACY TECHNICIAN
(652 CLOCK HOURS; CODE 1405)

Division: Healthcare
Program Manager: Jennifer Kline

The Certificate of Competency in Pharmacy Technician program meets Pharmacy Technician Certification Board requirements for students to sit for the Pharmacy Technician Certification Exam. Students will learn interpersonal skills and regulatory standards required of pharmacy technicians. Includes roles and responsibilities of the technician in a variety of entry-level pharmacy operations, response to regulatory issues, adherence to quality assurance procedures, patient and medication safety procedures, the procedures for handling of medications and filling medication orders, procurement, billing, reimbursement, inventory management procedures, and use of pharmacy technology and informatics database software.

Program Notes:
- Students are required to complete 24 hours of job shadowing during this course to be eligible for clinical externship. Job shadowing sites are specific and may require hours different than the regular scheduled meeting pattern.
- Students are required to complete 200 hours of clinical externship to complete this program. Externship hours are site specific and may require attendance any day of the week, including during unscheduled days and times.
- Students are required to apply and maintain an Arizona State Pharmacy Technician Trainee license at the beginning of this program, so it will be received prior to job shadowing.
- Students will be required to take a randomized urine drug screen and submit a negative result prior to being eligible to participate in clinicals. The expense of the urine drug screen is the student's responsibility.
- Students must meet all required program competencies in order to receive a passing grade. This program is a P (pass) or Z (no pass) graded program.

Program Prerequisites: Program admission.

Admission Requirements:
1. 18 years of age to enroll
2. High school diploma or GED
3. Arizona Level One Fingerprint Clearance Card (DPS)
4. Proof of immunizations
5. Healthcare Level CPR Card
6. Healthcare signature form completed
7. MCCCD Supplemental Background Check
8. Accuplacer reading score of 74 or greater or Accuplacer Next generation score of 249 or greater, or ACT reading score of 22 or greater, or high school GPA of 3.0 or higher (within the last 10 years), or GED reading score of 175 or higher, or successful completion of RDG100 and CRE101 with a grade of C or better.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPH100</td>
<td>Electronic Medical Records</td>
<td>42</td>
</tr>
<tr>
<td>OPH101+</td>
<td>Introduction to Eye Care</td>
<td>54</td>
</tr>
<tr>
<td>OPH110+</td>
<td>Ocular Medical Terminology, Abbreviations, &amp; Disease Processes</td>
<td>42</td>
</tr>
<tr>
<td>OPH112+</td>
<td>Clinical Theory and Skills</td>
<td>150</td>
</tr>
<tr>
<td>OPH114+</td>
<td>Basic Skills &amp; Ocular Assessment</td>
<td>160</td>
</tr>
<tr>
<td>OPH190+</td>
<td>Ophthalmic Assisting Externship</td>
<td>120</td>
</tr>
<tr>
<td>Total Program Hours:</td>
<td></td>
<td>628</td>
</tr>
</tbody>
</table>

Program Notes:
- Students are required to apply and maintain an Arizona State Pharmacy Technician Trainee license at the beginning of this program, so it will be received prior to job shadowing.
- Students are provided the opportunity to take this examination prior to going to clinical externship. The expense of the examination is the student's responsibility.
- Students must meet all required program competencies in order to receive a passing grade. This program is a P (pass) or Z (no pass) graded program.

Admission Requirements:
1. 18 years of age to enroll
2. Accuplacer Reading score of 74 or greater or Accuplacer Next generation score of 249 or greater, or ACT Reading score of 22 or greater, or high school GPA of 3.0 or higher (within the last 10 years), or GED Reading score of 175 or higher, or successful completion of RDG100 and CRE101 with a grade of C or better.
3. Completed admission packet
4. Arizona Level One Fingerprint Clearance Card (DPS)
5. Proof of immunizations
6. Healthcare Level CPR Card
7. Healthcare signature form completed

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISP108B</td>
<td>Keyboarding II</td>
<td>36</td>
</tr>
<tr>
<td>PHC101+</td>
<td>Pharmacology for Pharmacy Technicians</td>
<td>60</td>
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<tr>
<td>PHC102+</td>
<td>Pharmacy Tech I</td>
<td>120</td>
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<tr>
<td>PHC102AB+</td>
<td>Pharmacy Tech II</td>
<td>128</td>
</tr>
<tr>
<td>PHC107+</td>
<td>Math and Dosages</td>
<td>90</td>
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<tr>
<td>PHC122+</td>
<td>Pharmacy Tech Certification Review</td>
<td>18</td>
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<tr>
<td>PHC114+</td>
<td>Pharmacy Tech Externship</td>
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<td>Total Program Hours:</td>
<td></td>
<td>652</td>
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</table>
PHYSICAL THERAPIST ASSISTING
ASSOCIATE IN APPLIED SCIENCE DEGREE IN PHYSICAL THERAPIST ASSISTING
(68-76 CREDITS; CODE 3675)

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Clock Hours</th>
</tr>
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<tbody>
<tr>
<td>PLC109 Phlebotomy Basic Skills</td>
<td>90</td>
</tr>
<tr>
<td>PLC111 Specimen Processing and Advanced Techniques in Phlebotomy</td>
<td>90</td>
</tr>
<tr>
<td>PLC122 Phlebotomy Practicum</td>
<td>120</td>
</tr>
<tr>
<td>Total Program Hours:</td>
<td>300</td>
</tr>
</tbody>
</table>

To qualify, students must earn a grade of C or better in all courses within the program. Students must earn a grade of C or better for all courses required within the program. A passing score on the examination is required for licensure/certification to practice as a physical therapist assistant in the state of Arizona and in many other states.

The Physical Therapist Assistant program is accredited by the Commission on Accreditation in Physical Therapy Education. The Associate in Applied Science (AAS) in the Physical Therapist Assisting program prepares students to use therapeutic modalities and procedures under the direction and supervision of a physical therapist. The physical therapist assistant works with patients who have physical impairments requiring physical therapy services to relieve pain and heal damaged tissue; and to improve range of motion, strength, and functional mobility. Physical therapy treatments include but are not limited to the application of therapeutic modalities; therapeutic exercise including stretching, range of motion, and strengthening; mobility skills including ambulation, transfers, and wheelchair mobility activities; balance exercises; and wound care management.

Students with other related health care experiences not listed on the following program preparatory options may request an evaluation for course competency equivalence for work experience or equivalent education as evaluated by the Gateway Health Care Curriculum Coordinator. Once admitted to the program, students should plan to attend full-time. Students can achieve the ASEGC A by completing a second course with an H designation, a second course with an SB designation, a course with a CS designation, a course with an HS designation, a course with an L designation, a course with an HS designation, a course with an L designation, and a course with either the G or H designation. Courses with an HU, SB, or L designation may also be used to fulfill the C, G, and/or H designation requirements.

Admission Criteria:

1. Formal application and admission to the program by a point system is required. See point system description in Physical Therapist Assisting (PTA) Program packet in the Health Sciences Division of college.
2. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District background check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
3. Clinical Health and Safety Requirements: Prior to placement in the clinical setting, the student must comply with all requirements of the MCCCD clinical health and safety policy.
4. Inability to comply with Background Check Requirements and/or Clinical Health and Safety Requirements prior to placement in the clinical setting may result in cancellation of enrollment.
5. Forty (40) hours of volunteer work/observation in physical therapy practice settings supervised by a licensed physical therapist or physical therapist assistant are required to apply for admission into the PTA Program. A minimum of 20 hours in an inpatient (hospital, skilled nursing facility, rehabilitation hospital) setting is required.

Program Prerequisites:

Program preparatory courses must be completed to apply for admission into the PTA program.

Successful completion of the following college courses with a grade of B or better in BIO160 or BIO201 and ENG101 or ENG107, or ENG102 or ENG108.

<table>
<thead>
<tr>
<th>Course</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO160 Introduction to Human Anatomy and Physiology (4) OR</td>
<td>4</td>
</tr>
<tr>
<td>BIO201+ Human Anatomy and Physiology I (4)</td>
<td>4</td>
</tr>
<tr>
<td>BIO205+ Introductory Biology for Allied Health (4) OR</td>
<td>3</td>
</tr>
<tr>
<td>BIO215+ General Biology ( Majors) I (4) OR</td>
<td>3</td>
</tr>
<tr>
<td>BIO216+ General Biology ( Majors) II (4) OR</td>
<td>3</td>
</tr>
<tr>
<td>HCC130 Fundamentals in Health Care (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>HCC130AA Medical Terminology for Health Care Professionals (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>HCC130AC Personal Wellness and Safety (0.5) AND</td>
<td>3</td>
</tr>
<tr>
<td>HCC130AD Communication and Teamwork in Health Care Organizations (0.5) AND</td>
<td>3</td>
</tr>
<tr>
<td>HCC130AE Legal Issues in Health Care (0.5) AND</td>
<td>3</td>
</tr>
<tr>
<td>HCC130AF Decision Making in the Health Care Setting (0.5) OR</td>
<td>3</td>
</tr>
<tr>
<td>HCC145 Medical Terminology for Health Care Professionals (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>HCC146 Common Medical Terminology for Health Care Professionals (2)</td>
<td>3</td>
</tr>
<tr>
<td>PTA101+ Survey of Physical Therapy</td>
<td>1.5</td>
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<tr>
<td>PTA103+ Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>PTA104+ Musculo-Skeletal Assessment Techniques</td>
<td>1.5</td>
</tr>
<tr>
<td>PTA200+ Patient Mobility Techniques</td>
<td>4</td>
</tr>
<tr>
<td>PTA202+ Therapeutic Modalities</td>
<td>5</td>
</tr>
<tr>
<td>PTA203+ Clinical Pathology</td>
<td>3</td>
</tr>
<tr>
<td>PTA205+ Communication in Physical Therapy</td>
<td>1.5</td>
</tr>
<tr>
<td>PTA206+ Clinical Practicum I</td>
<td>1</td>
</tr>
<tr>
<td>PTA207+ Clinical Practicum Seminar I</td>
<td>1</td>
</tr>
<tr>
<td>PTA208+ Rehabilitation of Special Populations</td>
<td>2</td>
</tr>
<tr>
<td>PTA210+ Orthopedic Physical Therapy</td>
<td>4</td>
</tr>
<tr>
<td>PTA214+ Electromydograms</td>
<td>2.5</td>
</tr>
<tr>
<td>PTA215+ Wound Care for the Physical Therapist Assistant</td>
<td>1</td>
</tr>
<tr>
<td>PTA217+ Clinical Neurology</td>
<td>2</td>
</tr>
</tbody>
</table>

Required courses may be taken prior to program entrance or concurrent with required courses. HCC courses must be completed prior to clinical placement if taken concurrent with required courses.
Certificate & Degree Programs 2019-2020

8. MCCCD Supplemental Background Check
10. Required to sign up and pay for Castle Branch and myClinicalExchange.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLC109</td>
<td>Phlebotomy Basic Skills</td>
<td>30</td>
</tr>
<tr>
<td>PLC111</td>
<td>Specimen Processing and Advanced Techniques in Phlebotomy</td>
<td>30</td>
</tr>
<tr>
<td>PLC122</td>
<td>Phlebotomy Practicum</td>
<td>30</td>
</tr>
</tbody>
</table>

Total Program Hours: 90

PHYSICAL THERAPIST ASSISTING
ASSOCIATE IN APPLIED SCIENCE DEGREE IN PHYSICAL THERAPIST ASSISTING (68-76 CREDITS; CODE 3675)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Health Sciences
Program Director: Peter Zawicki

The Associate in Applied Science (AAS) in the Physical Therapist Assisting program prepares students to use therapeutic modalities and procedures under the direction and supervision of a physical therapist. The physical therapist assistant works with patients who have physical impairments requiring physical therapy services to relieve pain and heal damaged tissue; and to improve range of motion, strength, and functional mobility. Physical therapy treatments include but are not limited to the application of therapeutic modalities; therapeutic exercise including stretching, range of motion, and strengthening; mobility skills including ambulation, transfers, and wheelchair mobility activities; balance exercises; and wound care management.

The Physical Therapist Assisting program is accredited by the Commission on Accreditation in Physical Therapy Education. Only graduates of an accredited training program may practice as a physical therapist assistant in the state of Arizona. To achieve the AGEC-A, students must successfully complete the following: 20 credits in the following categories: English Core Curriculum, institutional electives, program specific courses, and technical courses.

Program Notes:

Students must earn a grade of C or better for all courses required within the program. + indicates course has prerequisite and/or corequisites.

Students with other related health care experiences not listed on the following program preparatory options may request an evaluation for course competency equivalency for work experience or equivalent education as evaluated by the GateWay Health Care Curriculum Coordinator. Once admitted to the program, students should plan to attend full-time. Students can achieve the AGEC-A by completing a second course with an H designation, a second course with an SB designation, a course with a CB designation, a course with a G designation, a course with an L designation, a course with an S designation, and courses with either the C or H designation. Courses with an H designation may also be used to fulfill the C, G, and/or H designation requirements.

Admission Criteria:

1. Formal application and admission to the program by a point system is required. See point system description in Physical Therapist Assisting (PTA) Program packet in the Health Sciences Division of college.
2. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District background check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
3. Clinical Health and Safety Requirements: Prior to placement in the clinical setting, the student must comply with all requirements of the MCCCD clinical health and safety policy.
4. Ability to comply with Background Check Requirements and/or Clinical Health and Safety Requirements prior to placement in the clinical setting may result in cancellation of enrollment.
5. Forty (40) hours of volunteer/work/observation in physical therapy practice settings supervised by a licensed physical therapist or physical therapist assistant are required to apply for admission into the PTA Program. A minimum of 20 hours in an inpatient (hospital, skilled nursing facility, rehabilitation hospital) setting is required.

Program Prerequisites:

Program preparatory courses must be completed to apply for admission into the PTA program.

Successful completion of the following college courses with a grade of B or better in BIO160 or BIO201 and ENG101 or ENG107, or ENG102 or ENG108.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO160</td>
<td>Introduction to Human Anatomy and Physiology (4)</td>
<td>3</td>
</tr>
<tr>
<td>BIO201+</td>
<td>Human Anatomy and Physiology I (4)</td>
<td>3</td>
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</table>

Students selecting BIO201 must complete the prerequisite courses BIO156 or BIO181.

Required HCC courses may be taken prior to program entrance or concurrent with required courses. HCC courses must be completed prior to clinical placement if taken concurrent with required courses.

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCC130</td>
<td>Fundamentals in Health Care Delivery (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>HCC130AA</td>
<td>Health Care Today (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AB</td>
<td>Workplace Behaviors in Health Care (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AC</td>
<td>Personal Wellness and Safety (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AD</td>
<td>Communication and Teamwork in Health Care Organizations (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AE</td>
<td>Legal Issues in Health Care (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AF</td>
<td>Decision Making in the Health Care Setting (0.5) OR</td>
<td>0.5</td>
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Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Clock Hours</th>
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</thead>
<tbody>
<tr>
<td>HCC130</td>
<td>Common Medical Terminology for Health Care Professionals (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>HCC146</td>
<td>Medical Terminology for Health Care Professionals (2)</td>
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Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Clock Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTA101+</td>
<td>Survey of Physical Therapy</td>
<td>1.5</td>
</tr>
<tr>
<td>PTA103+</td>
<td>Kinesiology</td>
<td>3</td>
</tr>
<tr>
<td>PTA104+</td>
<td>Musculo-Skeletal Assessment Techniques</td>
<td>1.5</td>
</tr>
<tr>
<td>PTA200+</td>
<td>Patient Mobility Techniques</td>
<td>4</td>
</tr>
<tr>
<td>PTA202+</td>
<td>Therapeutic Modalities</td>
<td>1</td>
</tr>
<tr>
<td>PTA203+</td>
<td>Clinical Pathology</td>
<td>3</td>
</tr>
<tr>
<td>PTA205+</td>
<td>Communication in Physical Therapy</td>
<td>1.5</td>
</tr>
<tr>
<td>PTA206+</td>
<td>Clinical Practicum I</td>
<td>1</td>
</tr>
<tr>
<td>PTA207+</td>
<td>Clinical Practicum Seminar I</td>
<td>1</td>
</tr>
<tr>
<td>PTA208+</td>
<td>Rehabilitation of Special Populations</td>
<td>2</td>
</tr>
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<td>PTA210+</td>
<td>Orthopedic Physical Therapy</td>
<td>4</td>
</tr>
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<td>PTA214+</td>
<td>Electromodulations</td>
<td>2.5</td>
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<tr>
<td>PTA215+</td>
<td>Wound Care for the Physical Therapist Assistant</td>
<td>1</td>
</tr>
<tr>
<td>PTA217+</td>
<td>Clinical Neurology</td>
<td>2</td>
</tr>
</tbody>
</table>

+ Indicates course has prerequisites and/or corequisites.
** Indicates any module suffixed courses.
Successful completion of the AAS degree in Polysomnographic Technology program enables the student to take various diagnostic and therapeutic tools providing care to patients of all ages. Physiological monitoring and testing, diagnosis, management, and treatment of sleep-related disorders with the use of various diagnostic and therapeutic tools providing care to patients of all ages.

Program Director: Wendi Nugent

Division: Health Science

(64-83 CREDITS; CODE 3135)

**POLYSOMNOGRAPHIC TECHNOLOGY**

**ASSOCIATE IN APPLIED SCIENCE IN POLYSOMNOGRAPHIC TECHNOLOGY**

To qualify, students must earn a grade of C or better in all courses required within the program.

**Program Director:** Wendi Nugent

The Associate in Applied Science (AAS) in Polysomnographic Technology program includes parallel clinical training in various Valley hospitals and free-standing sleep centers. Polysomnographic Technology program prepares polysomnographic technologists (sleep technologists) to assist physicians specializing in sleep medicine in the clinical assessment, physiological monitoring and testing, diagnosis, management, and treatment of sleep-related disorders with the use of various diagnostic and therapeutic tools providing care to patients of all ages.

Successful completion of the AAS degree in Polysomnographic Technology program enables the student to take the Board of Registered Polysomnographic Technologists (BRPT) examination to become a Registered Polysomnographic Technologist (RPSGT).

Program Notes:

Students must earn a grade of C or better for all courses required within the program.

+ indicates course has prerequisite and/or corequisites.
**++** indicates any module suffixed courses.

Students may opt to transfer from the Polysomnography program into the Electroneurodiagnostic (END) Technology while in the first semester of the program. Seat in the END program will be granted if there is no waitlist and Program Director approval is granted at the time of transfer.

**Certificate & Degree Programs 2019-2020**

<table>
<thead>
<tr>
<th>Program</th>
<th>Code</th>
<th>Prerequisites</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG102+</td>
<td>First-Year Composition (3)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENG103+</td>
<td>First-Year Composition for ESL (3)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BIO156+</td>
<td>Introductory Biology for Allied Health (4)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>BIO202+</td>
<td>Human Anatomy and Physiology I (4)</td>
<td>4</td>
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<tr>
<td>BIO203+</td>
<td>Human Anatomy and Physiology II (4)</td>
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<td>BIO180+</td>
<td>Introduction to Psychology</td>
<td>3</td>
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<tr>
<td>MAT121+</td>
<td>Intermediate Algebra (4)</td>
<td>4</td>
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<tr>
<td>MAT122+</td>
<td>Intermediate Algebra (3)</td>
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<tr>
<td>HCC130 +</td>
<td>Fundamentals in Health Care Delivery (3)</td>
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<td></td>
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<tr>
<td>HCC130A +</td>
<td>Health Care Today (0.5)</td>
<td>0.5</td>
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<td>HCC130B +</td>
<td>Workplace Behaviors in Health Care (0.5)</td>
<td>0.5</td>
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<tr>
<td>HCC130C +</td>
<td>Personal Wellness and Safety (0.5)</td>
<td>0.5</td>
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<tr>
<td>HCC130D +</td>
<td>Communication and Teamwork in Health Care Organizations (0.5)</td>
<td>0.5</td>
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<tr>
<td>HCC130E +</td>
<td>Legal Issues in Health Care (0.5)</td>
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<tr>
<td>HCC130F +</td>
<td>Decision Making in the Health Care Setting (0.5)</td>
<td>0.5</td>
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<tr>
<td>HCC130G +</td>
<td>Work experience or equivalent education as evaluated by the GateWay Health Care Coordinator</td>
<td>0-3</td>
<td></td>
</tr>
</tbody>
</table>

**Program Prerequisites**

1. Formal application can be made at any time.
2. Formal admission to the Polysomnography or Electroneurodiagnostic (END) Technology program is required.
3. Background check requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check Standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
4. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
5. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes may result in cancellation of enrollment.
6. Proof of current American Heart Association Health Care Provider CPR Certification.

**Required Courses**

<table>
<thead>
<tr>
<th>Program</th>
<th>Code</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTAG1+</td>
<td>Physical Therapy Seminar</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PTAG2+</td>
<td>Clinical Practicum II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PTAG3+</td>
<td>Clinical Practicum Seminar I</td>
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<td></td>
</tr>
<tr>
<td>PTAG4+</td>
<td>Clinical Practicum Seminar II</td>
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<td>PTAG5+</td>
<td>Clinical Practicum Seminar III</td>
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<tr>
<td>PSY101+</td>
<td>Introduction to Psychology</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**General Education Requirements**

Three (3) credits of First Year Composition are met by ENG101 or ENG107 or ENG102 or ENG108 in the Prerequisites area.

**Program Notes:**

+ Indicates course has prerequisite and/or corequisites.
++ Indicates any module suffixed courses.
Certificate & Degree Programs 2019-2020

PTA230+ Physical Therapy Seminar ......................................................... 2
PTA280+ Clinical Practicum II ................................................................. 3
PTA281+ Clinical Practicum Seminar II .................................................. 1
PTA290+ Clinical Practicum III ............................................................... 3
PTA292+ Clinical Practicum Seminar III .................................................. 1
PTA295+ Physical Therapist Assistant Examination Review .................. 2
PSY101 Introduction to Psychology ....................................................... 3

General Education Requirements ......................................................... 12-17

Three (3) credits of First Year Composition are met by ENG101 or ENG107 or ENG108 in the
Prerequisites area.
ENG102+ First-Year Composition (3) OR
ENG108+ First-Year Composition for ESL (3) ........................................... 3
Any general education course in the Oral Communication area ... 3
CRE101+ College Critical Reading and Critical Thinking (3) OR Equivalent as indicated by assessment (0) ................................................ 0-3
Any approved general education course from the Mathematics area .... 3-5

Recommended for students intending to transfer:
MAT140+ College Mathematics (5) OR
MAT141+ College Mathematics (4) OR
MAT142+ College Mathematics (3) OR
Any MAT+++ with the MA general education designation .................. 3-5
Any approved general education course from the Humanities, Arts and Design area ......................................................... 3

POLYSOMNOGRAPHIC TECHNOLOGY
ASSOCIATE IN APPLIED SCIENCE IN POLYSOMNOGRAPHIC TECHNOLOGY (64-83 CREDITS; CODE 3135)

To qualify, students must earn a grade of C or better in all courses required within the program.
Division: Health Science
Program Director: Wendi Nugent

The Associate in Applied Science (AAS) in Polysomnographic Technology program includes parallel clinical training in various Valley hospitals and free-standing sleep centers. Polysomnographic Technology program prepares polysomnographic technologists (sleep technologists) to assist physicians specializing in sleep medicine in the clinical assessment, physiological monitoring and testing, diagnosis, management, and treatment of sleep related disorders with the use of various diagnostic and therapeutic tools providing care to patients of all ages.

Successful completion of the AAS degree in Polysomnographic Technology program enables the student to take the Board of Registered Polysomnographic Technologists (BRPT) examination to become a Registered Polysomnographic Technologist (RPSGT).

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisite and/or corequisites.
Students may opt to transfer from the Polysomnography program into the Electroneurodiagnostic (END) Technology while in the first semester of the program. Seat in the END program will be granted if there is no waitlist and Program Director approval is granted at the time of transfer.

Certificate & Degree Programs 2019-2020

A. Admissions Requirements
1. Formal application can be made at any time.
2. Formal admission to the Polysomnography or Electroneurodiagnostic (END) Technology program is required.
3. Background check requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check Standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
4. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
5. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes may result in cancellation of enrollment.
6. Proof of current American Heart Association Health Care Provider CPR Certification.

Program Prerequisites ................................................................. 10-20

Students selecting BIO201 and BIO202 must complete the prerequisite courses BIO156 or BIO181.
BIO160 Introduction to Human Anatomy and Physiology (4) OR
BIO201+ Human Anatomy and Physiology I (4) AND
BIO202+ Human Anatomy and Physiology II (4) .................................. 4-8

BIO156+ Introductory Biology for Allied Health (4) OR
BIO181+ General Biology (Majors I) (4) OR
One year high school biology with a grade of C or better (0) .................. 0-4

ENG101+ First-Year Composition (3) OR
ENG107+ First-Year Composition for ESL (3) ........................................ 3

MAT120+ Intermediate Algebra (5) OR
MAT121+ Intermediate Algebra (4) OR
MAT122+ Intermediate Algebra (3) OR
Equivalent course or satisfactory completion of a higher level mathematics course ........ 3-5

HCC courses may be taken prior to acceptance into the Polysomnographic Technology program or as corequisite.

Required Courses ............................................................................... 42-48

EEG115+ Biomedical Electronic Technology I ........................................ 2
EEG116+ Biomedical Electronic Technology II ..................................... 3
EEG130+ Introduction to EEG .............................................................. 3
EEG201+ Applied Neurophysiology ..................................................... 3

HCC130 Fundamentals in Health Care Delivery (3) OR
HCC130A Health Care Today (0.5) AND
HCC130B Workplace Behaviors in Health Care (0.5) AND
HCC130C Personal Wellness and Safety (0.5) AND
HCC130D Communication and Teamwork in Health Care Organizations (0.5) AND
HCC130E Legal Issues in Health Care (0.5) AND
HCC130F Decision Making in the Health Care Setting (0.5) OR
Work experience or equivalent education as evaluated by the GateWay Health Core Curriculum Coordinator ................................................. 0-3

HCC145 Medical Terminology for Health Care Professionals (3) OR
HCC146 Common Medical Terminology for Health Care Professionals (2) OR
Work experience or equivalent education as evaluated by the GateWay Health Core Curriculum Coordinator ............................................. 0-3

+ Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
The Certificate of Completion (CCL) in Computed Tomography program offers graduate Radiologic Technologists, Radiation Therapy Practitioners and other health professionals a pathway to enhance their technical and clinical skills in the field of computed tomography. To qualify, students must earn a grade of C or better in all courses within the program.

Program Requirements:
- Admission Criteria:
  1. Applicant must have completed prerequisite courses or have equivalents.

Program Notes:
- Any approved general education course from the College Critical Reading and Critical Thinking area.
- Any approved general education course from the Humanities, Arts and Design area.
- PSY101 Introduction to Psychology

RADIOLOGY - COMPUTED TOMOGRAPHY
CERTIFICATE OF COMPLETION IN COMPUTED TOMOGRAPHY
(18-19 CREDITS; CODE 5461)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Medical Imaging and Cardiopulmonary Sciences
Program Director: Tabatha Hatfield

The Certificate of Completion (CCL) in Computed Tomography program offers graduate Radiologic Technologists, Radiation Therapists, and nuclear medicine technologists the opportunity to complete both didactic coursework and clinical experiences necessary to prepare to meet eligibility for the professional certification in this field. The program focuses on the specific skills and knowledge necessary to become proficient in this field.

Program Notes:
- Students must earn a grade of C or better for all courses required within the program.
- Admission Criteria:
  1. Certified by the American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy, or
     Certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine, OR

RADIATION - DIAGNOSTIC MEDICAL SONOGRAPHY
ASSOCIATE IN APPLIED SCIENCE DEGREE IN DIAGNOSTIC MEDICAL SONOGRAPHY
(86-107 CREDITS; CODE 3656)
To qualify, students must earn a grade of C or better in all courses within the program.
Division: Medical Imaging and Cardiopulmonary Sciences
Program Director: Bryan Dodd

The Associate in Applied Science (AAS) in Diagnostic Medical Sonography program is designed for students who wish to explore the field of sonography, as well as those who have made a career decision to seek certification from the American Registry of Diagnostic Medical Sonographers (ARDMS). Diagnostic medical sonographers are highly specialized members of the health care team who provide patient services using ultrasound under the direction of a physician. Sonographers provide care essential to diagnostic ultrasound imaging by operating equipment and performing examinations for medical diagnosis. Sonographers have an in-depth knowledge of physics, disease processes, physiology, cross-sectional anatomy, positioning and sonographic techniques necessary to create ultrasound images. Knowledge of darkroom techniques, equipment maintenance, record keeping and film processing are also part of the job.

Careers in the field of diagnostic sonography can be found in hospitals, clinics, doctors’ offices, and mobile imaging centers. Research, applications, teaching and marketing may be available to sonographers who wish to explore careers in business or industry.

Educational Information: The Diagnostic Medical Sonography program is open to all students who successfully complete the program prerequisites. Full-time day students must apply to the program and be accepted prior to registering for course offerings. The full-time program is 21 months in length. Clinical affiliations include a cooperative effort with a number of area hospitals, clinics and doctors’ offices. Clinical training is required by the ARDMS prior to sitting for the registry examination.

Program Notes:
- Students must earn a grade of C or better for all courses required within the program.
- Admission Criteria:
  1. Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy, or
     Certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine, OR

Radiography, or Nuclear Medicine student currently enrolled at Gateway, or registry eligible graduate.

2. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.

3. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.

4. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites: None

Required Courses: 
- ENG108+ First-Year Composition for ESL (3) OR
- ENG102+ First-Year Composition (3) OR
- Any approved general education course from the Humanities, Arts and Design area (3)

Program Notes: 
- Indicates course has prerequisites and/or co-requisites.
- Indicates any module suffixed courses.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HCC164+</td>
<td>Pharmacology for Allied Health</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC200+</td>
<td>Basic Client Care for Allied Health</td>
<td>0.5</td>
</tr>
<tr>
<td>HRC101</td>
<td>Overview of Healthcare Compliance</td>
<td></td>
</tr>
<tr>
<td>PSG140+</td>
<td>Respiratory Care Fundamentals and Physiology for Polysomnography</td>
<td>4</td>
</tr>
<tr>
<td>PSG150+</td>
<td>Introduction to Sleep Medicine</td>
<td>3</td>
</tr>
<tr>
<td>PSG160LL+</td>
<td>Introduction to Sleep Medicine Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PSG160+</td>
<td>Polysomnographic Procedures</td>
<td>2</td>
</tr>
<tr>
<td>PSG160LL+</td>
<td>Polysomnographic Procedures Laboratory</td>
<td></td>
</tr>
<tr>
<td>PSG165+</td>
<td>Clinical Polysomnography I</td>
<td>3</td>
</tr>
<tr>
<td>PSG170+</td>
<td>Sleep Therapeutics</td>
<td>2</td>
</tr>
<tr>
<td>PSG170LL+</td>
<td>Sleep Therapeutics Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PSG250+</td>
<td>Record Scoring Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>PSG250LL+</td>
<td>Record Scoring Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PSG260+</td>
<td>Special Topics in Polysomnography</td>
<td>1</td>
</tr>
<tr>
<td>PSG265+</td>
<td>Clinical Polysomnography II</td>
<td>2</td>
</tr>
<tr>
<td>PSG275+</td>
<td>Clinical Polysomnography III</td>
<td>3</td>
</tr>
<tr>
<td>PSG262AA+</td>
<td>Volunteerism for Polysomnographic Technology: Service Learning Experience</td>
<td>1</td>
</tr>
</tbody>
</table>

**General Education Requirement**

Three (3) credits of First Year Composition are met by ENG101 or ENG107 in Program Prerequisites area.

ENG102* | First-Year Composition (3) OR ENG108* | First-Year Composition for ESL (3) OR ENG111* | Technical and Professional Writing (3) | 3

Any approved general education course from the Oral Communication area | 3

CRE101+ | College Critical Reading and Critical Thinking (3) OR Equivalent as indicated by assessment (0) | 0-3

Any approved general education course from the Humanities, Arts and Design area | 3

PSY101 | Introduction to Psychology | 3

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RADIOLOGY - COMPUTED TOMOGRAPHY

**Certificate of Completion in Computed Tomography**

(18-19 CREDITS; CODE 5461)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Medical Imaging and Cardiopulmonary Sciences

Program Director: Tabatha Hatfield

The Certificate of Completion (CCL) in Computed Tomography program offers graduate Radiologic Technologists, Radiation Therapists, and graduate Nuclear Medicine Technologists the opportunity to complete both didactic coursework and clinical skills experience necessary to prepare to meet eligibility for the professional certification in this field. The program focuses on specific skills and knowledge necessary to become proficient in this field.

Program Notes:

1. Students must earn a grade of C or better for all courses required within the program.
2. + indicates course has prerequisites and/or corequisites.

Admission Criteria:

1. Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy, OR Certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine, OR

Program Notes:

- Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.

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RADIOLOGY - DIAGNOSTIC MEDICAL SONOGRAPHY

**ASSOCIATE IN APPLIED SCIENCE DEGREE IN DIAGNOSTIC MEDICAL SONOGRAPHY**

(86-107 CREDITS; CODE 3656)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Medical Imaging and Cardiopulmonary Sciences

Program Director: Bryan Diddi

The Associate in Applied Science (AAS) in Diagnostic Medical Sonography program is designed for students who wish to explore the field of sonography, as well as those who have made a career decision to seek certification from the American Registry of Diagnostic Medical Sonographers (ARDMS). Diagnostic medical sonographers are highly specialized members of the health care team who provide patient services using ultrasound under the direction of a physician. Sonographers provide care essential to diagnostic ultrasound imaging by operating equipment and performing examinations for medical diagnosis.

Sonographers have an in-depth knowledge of physics, disease processes, physiology, cross-sectional anatomy, positioning and sonographic techniques necessary to create ultrasound images. Knowledge of darkroom techniques, equipment maintenance, record keeping and film processing are also part of the job.

Careers in the field of diagnostic sonography can be found in hospitals, clinics, doctors’ offices, and mobile imaging centers. Research, applications, teaching and marketing may be available to sonographers who wish to explore careers in business or industry.

Educational information: The Diagnostic Medical Sonography program is open to all students who successfully complete the program prerequisites. Full-time day students must apply to the program and be accepted prior to registering for course offerings. The full-time program is 21 months in length. Clinical affiliations include a cooperative effort with a number of area hospitals, clinics and doctors’ offices. Clinical training is required by the ARDMS prior to sitting for the registry examination.

Program Notes:

1. Students must earn a grade of C or better for all courses required within the program.
2. + indicates course has prerequisites and/or corequisites.

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**Certificate & Degree Programs 2019-2020**

Radiography, or Nuclear Medicine student currently enrolled at Gateway, or registry eligible graduate.

2. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.

3. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.

4. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites: None

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMII/DMII/ICE220+</td>
<td>Sectional Anatomy</td>
<td>3</td>
</tr>
<tr>
<td>DMII/ICE223+</td>
<td>Introduction to Computed Tomography (1) OR</td>
<td>2</td>
</tr>
<tr>
<td>NUC250+</td>
<td>Fundamentals of Computed Tomography for Nuclear Medicine Technologist (2)</td>
<td>1-2</td>
</tr>
<tr>
<td>ICE248+</td>
<td>Computed Tomography (CT) Multi-Planar Sectional Anatomy</td>
<td>2</td>
</tr>
<tr>
<td>ICE263+</td>
<td>Computed Tomography Physics and Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>ICE265+</td>
<td>Computed Tomography Procedure Protocols</td>
<td>3</td>
</tr>
<tr>
<td>ICE267+</td>
<td>Computed Tomography Advanced Imaging Practicum</td>
<td>2</td>
</tr>
<tr>
<td>ICE273+</td>
<td>Computed Tomography Pathology</td>
<td>3</td>
</tr>
<tr>
<td>ICE291+</td>
<td>Computed Tomography Registry and Board Exam Preparation</td>
<td>1</td>
</tr>
</tbody>
</table>

**Program Notes:**

- Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.

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**Program Notes:**

- Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.

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**Program Notes:**

- Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
Successful completion of the following college courses with a minimum, cumulative GPA of 3.0.

1. MAT121+ Intermediate Algebra (4) OR
   MAT131+ College Algebra/Functions (4) OR
   MAT122+ Intermediate Algebra (3) OR
   One of the following higher-level math courses:
   MAT150 College Algebra/Functions (5) OR
   MAT151 College Algebra/Functions (4) OR
   MAT152 College Algebra/Functions (3) OR
   MAT182 Plane Trigonometry (3) OR
   MAT187 Precalculus (5) OR
   MAT212 Brief Calculus (3) OR

2. BIO101+ Human Anatomy and Physiology I (4) AND
   BIO102+ Human Anatomy and Physiology II (4) OR
   General Biology (Majors) (4) OR
   One year high school biology with a grade of C or better.......................... 0-4
   COM114 Listening and Speaking for Today's Society.................................... 3
   ENG101+ First-Year Composition (3) OR
   ENG107+ First-Year Composition for ESL (3)............................................. 3
   HCC115 Medical Terminology for Health Care Professionals (3) OR
   HCC116 Common Medical Terminology for Health Care Professionals (2) OR
   Graduate of an allied health education program that is patient care related...... 0-3

3. MAT210+ Intermediate Algebra (5) OR
   MAT211+ Intermediate Algebra (4) OR
   MAT213 Brief Calculus (4) OR
   MAT217 Mathematical Analysis for Business (3) OR
   MAT218 Mathematical Analysis for Business (3) OR
   MAT220 Calculus with Analytic Geometry I (5) OR
   MAT221 Calculus with Analytic Geometry I (4) OR
   MAT225 Elementary Linear Algebra (3) OR
   MAT227 Discrete Mathematical Structures (3) OR

4. BIO156+ Introductory Biology for Allied Health (4) OR
   BIO157+ Plant and Animal Biology (4) OR
   BIO201+ Human Anatomy and Physiology I (4) AND
   BIO202+ Human Anatomy and Physiology II (4) OR
   General Biology (Majors) (4) OR
   One year high school biology with a grade of C or better.......................... 0-4
   COM114 Listening and Speaking for Today's Society.................................... 3
   ENG101+ First-Year Composition (3) OR
   ENG107+ First-Year Composition for ESL (3)............................................. 3
   HCC115 Medical Terminology for Health Care Professionals (3) OR
   HCC116 Common Medical Terminology for Health Care Professionals (2) OR
   Graduate of an allied health education program that is patient care related...... 0-3

5. DMS110+ Introduction to Diagnostic Sonography........................................ 3
   DMS120+ Ultrasound Imaging: Abdominal Procedures I............................... 3
   DMS120L+ Ultrasound Imaging: Abdominal Procedures I Laboratory.............. 1
   DMS121+ Ultrasound Imaging: Abdominal Procedures II............................... 3
   DMS130+ Ultrasound Imaging: OB/GYN Procedures...................................... 4
   DMS140+ Ultrasound Case Studies: Part I.................................................... 2
   DMS145+ Clinical Pathology for Diagnostic Imaging..................................... 1
   DMS150+ Sonographic Principles and Instrumentation.................................. 2
   DMS150L+ Sonographic Principles and Instrumentation Laboratory.................. 1
   DMS151+ Sonographic Principles and Instrumentation II.............................. 2
   DMS155+ Clinical Practicum I................................................................. 1
   DMS161+ Clinical Practicum II-AA............................................................ 1
   DMS162+ Clinical Practicum II-AB............................................................. 2
   DMS163+ Clinical Practicum II-AC............................................................. 3
   DMS171+ Clinical Practicum III-AA............................................................ 2
   DMS172+ Clinical Practicum III-AB............................................................. 2
   DMS225+ High Risk Obstetric/Gynecology Sonography............................... 1
   DMS240+ Ultrasound Case Studies: Part II................................................ 2
   DMS241+ Ultrasound Case Studies: Part III................................................ 2
   DMS261+ Clinical Practicum IV-AA............................................................ 2
   DMS262+ Clinical Practicum IV-AB............................................................ 2
   DMS270+ Clinical Practicum V-AA.............................................................. 1
   DMS263+ Vascular Clinical Practicum I (2) OR
   DMS271+ Clinical Practicum V-AB (2)....................................................... 2
   DMS272+ Clinical Practicum V-AC (2) OR
   DMS273+ Vascular Clinical Practicum II .................................................... 2
   DMS281+ Ultrasound Registry Preparation Seminar: Physics and Instrumentation 1
   DMS282+ Ultrasound Registry Preparation Seminar: Abdominal and Small Parts Imaging 1
   DMS283+ Ultrasound Registry Preparation Seminar: Obstetrics, Gynecology, and Neonate 1
   DMS210+ Concepts of Vascular Imaging..................................................... 2
   DMS210L+ Concepts of Vascular Imaging Laboratory.................................... 1
   DMS284+ Ultrasound Registry Preparation: Vascular Imaging....................... 1
   DMS285+ Intermediate Vascular Technology.............................................. 2
   DMS286+ Advanced Vascular Technology.................................................. 2
   DMS286L+ Advanced Vascular Technology Laboratory................................ 1

Optional: Students seeking a specialty area in sonography may select 0 (zero) to 3 (three) credits from courses below.

+ Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.
Certificate & Degree Programs 2019-2020

++ Indicates any suffixed courses.
Due to the requirements of the program accrediting body, the course of study requires many hours of classroom and clinical time.

Admission Criteria:
1. Formal application and admission to the program.
2. Background check requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check Standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
3. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
4. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites

Successful completion of the following college courses with a minimum, cumulative GPA of 3.0.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO156+</td>
<td>Introductory Biology for Allied Health (4) OR</td>
</tr>
<tr>
<td>BIO181+</td>
<td>General Biology (Majors) I (4) OR</td>
</tr>
<tr>
<td>BIO201+</td>
<td>Human Anatomy and Physiology I (4) AND</td>
</tr>
<tr>
<td>BIO202+</td>
<td>Human Anatomy and Physiology II (4)</td>
</tr>
</tbody>
</table>

Students selecting BIO201 and BIO202 must complete the prerequisite courses BIO156 or BIO181.

COM+++++ Any approved general education course from the Oral Communication area .......... 3

HCC146 Common Medical Terminology for Health Care Professionals (3) OR

MAT120+ Intermediate Algebra (5) OR

MAT121+ Intermediate Algebra (4) OR

MAT122+ Intermediate Algebra (3) OR

MAT150 College Algebra/Functions (5) OR

MAT151 College Algebra/Functions (4) OR

MAT152 College Algebra/Functions (3) OR

MAT182 Plane Trigonometry (3) OR

MAT187 Precalculus (5) OR

MAT212 Brief Calculus (3) OR

MAT213 Brief Calculus (4) OR

MAT217 Mathematical Analysis for Business (3) OR

MAT218 Mathematical Analysis for Business (4) OR

MAT220 Calculus with Analytic Geometry I (5) OR

MAT221 Calculus with Analytic Geometry II (4) OR

MAT222 Elementary Linear Algebra (3) OR

MAT227 Discrete Mathematical Structures (3) OR

Successful completion of the following college courses with a minimum, cumulative GPA of 3.0.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>PHY101+</td>
<td>Introduction to Physics (4) OR</td>
</tr>
<tr>
<td>PHY111+</td>
<td>General Physics (4)</td>
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</table>

Restricted Electives

Optional: Students seeking a specialty area in sonography may select 0 (zero) to 3 (three) credits from courses below.

Certificate & Degree Programs 2019-2020

MAT230 Calculus with Analytic Geometry II (5) OR

MAT231 Calculus with Analytic Geometry II (4) OR

MAT240 Calculus with Analytic Geometry III (5) OR

MAT241 Calculus with Analytic Geometry III (4) OR

MAT276 Modern Differential Equations (4) ................. 3-5

DMS101 Patient Care in Diagnostic Sonography ............... 1

DMS105+ Fundamentals of Radiation Physics (3) OR

PHY101+ Introduction to Physics (4) OR

PHY111+ General Physics (4) |

Restricted Electives

Optional: Students seeking a specialty area in sonography may select 0 (zero) to 3 (three) credits from courses below.

** Indicates course has prerequisites and/or co-requisites.
++ Indicates any suffixed courses.

246 247
Certificate & Degree Programs 2019-2020

+ Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.

General Education Requirement .......................................................... 8-12

Three (3) credits of First Year Composition are met by ENGL1 or ENGL10 in Program Prerequisites area.

ENG102+ First-Year Composition (3) OR
ENG108+ First-Year Composition for ESL (3)............................................. 3

CRE101+ College Critical Reading & Critical Thinking (3) OR Equivalent as indicated by assessment (0)......................................................... 0-3

Any approved general education course from the Humanities, Arts and Design area............................. 2-3
Any approved general education course from the Social-Behavioral Sciences area................................. 3

RADIOLOGY - DIAGNOSTIC MEDICAL SONOGRAPHY
CERTIFICATE OF COMPLETION IN DIAGNOSTIC MEDICAL SONOGRAPHY (78-95 CREDITS; CODE 56556)

To qualify, students must earn a grade of C or better in all courses within the program.

Division: Medical Imaging and Cardiopulmonary Sciences
Program Director: Bryan Dodd

The Certificate of Completion (CC) in Diagnostic Medical Sonography program is designed for students who wish to explore the field of sonography, as well as those who have made a career decision to seek certification from the American Registry of Diagnostic Medical Sonographers (ARDMS). Diagnostic medical sonographers are highly specialized members of the health care team who provide patient services using ultrasound under the direction of a physician. Sonographers provide care essential to diagnostic ultrasound imaging by operating equipment and performing examinations for medical diagnosis. Sonographers have an in-depth knowledge of physics, disease processes, physiology, cross-sectional anatomy, positioning and sonographic techniques necessary to create ultrasound images. Knowledge of darkroom techniques, equipment maintenance, record keeping and film processing are also part of the job.

Careers in the field of diagnostic sonography can be found in hospitals, clinics, doctors’ offices, and mobile imaging centers. Research, applications, teaching and marketing may be available to sonographers who wish to explore careers in business or industry.

Educational information: The Diagnostic Medical Sonography program is open to all students who successfully complete the program prerequisites and admission requirements. Full-time day students must apply to the program and be accepted prior to registering for course offerings. The full-time program is 21 months in length. Clinical affiliations include a cooperative effort with a number of area hospitals, clinics and doctors’ offices. Clinical training is required by the ARDMS prior to sitting for the registry examination.

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisites and/or corequisites.
++ indicates any module suffixed courses.

Due to the requirements of the program accrediting body, the course of study requires many hours of classroom and clinical time.

Admission Criteria:
1. Formal application and admission to the program.
2. Background check requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check Standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
3. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
4. Ability to comply with background check requirements and/or clinical health and safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites ................................................................. 17-31

Certificate & Degree Programs 2019-2020

Formal application to the Diagnostic Medical Sonography program can be made upon completion of the required prerequisite courses.

Successful completion of the following college courses with a minimum, cumulative GPA of 3.0.

BIO160 Introduction to Human Anatomy and Physiology (4) OR
BIO201+ Human Anatomy and Physiology I (4) AND
BIO202+ Human Anatomy and Physiology II (4).................................. 4-8

Students selecting BIO201 and BIO202 must complete the prerequisite courses BIO156 or BIO181.
BIO156+ Introductory Biology for Allied Health (4) OR
BIO181+ General Biology (Major) (4) OR
One year high school biology with a grade of C or better......................................................... 0-4

HCC145 Medical Terminology for Health Care Professionals (3) OR
HCC146 Common Medical Terminology for Health Care Professionals (2) OR
Graduate of an allied health education program that is patient care related................................. 0-3

MAT120+ Intermediate Algebra (5) OR
MAT121+ Intermediate Algebra (4) OR
MAT122+ Intermediate Algebra (3) OR
One of the following higher-level math courses:
MAT150 College Algebra/Functions (5) OR
MAT151 College Algebra/Functions (4) OR
MAT152 College Algebra/Functions (3) OR
MAT182 Plane Trigonometry (3) OR
MAT187 Precalculus (5) OR
MAT212 Brief Calculus (3) OR
MAT213 Brief Calculus (4) OR
MAT217 Mathematical Analysis for Business (3) OR
MAT218 Mathematical Analysis for Business (4) OR
MAT220 Calculus with Analytic Geometry I (5) OR
MAT221 Calculus with Analytic Geometry II (4) OR
MAT225 Elementary Linear Algebra (3) OR
MAT227 Discrete Mathematical Structures (3) OR
MAT230 Calculus with Analytic Geometry II (5) OR
MAT231 Calculus with Analytic Geometry II (4) OR
MAT240 Calculus with Analytic Geometry III (5) OR
MAT241 Calculus with Analytic Geometry III (4) OR
MAT276 Modern Differential Equations (4)........................................... 3-5

DMS101+ Patient Care in Diagnostic Sonography.................................. 1

DMII105+ Fundamentals of Radiation Physics (3) OR
PHY101+ Introduction to Physics (4) OR
PHY111+ General Physics I (4)............................................................ 3-4

ENG108+ First-Year Composition for ESL (3)
ENG107+ First-Year Composition for ESL (3)............................................. 3
HCC145 Medical Terminology for Health Care Professionals (3) OR
HCC146 Common Medical Terminology for Health Care Professionals (2) OR
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MAT276 Modern Differential Equations (4)........................................... 3-5

DMS101+ Patient Care in Diagnostic Sonography.................................. 1

DMII105+ Fundamentals of Radiation Physics (3) OR
PHY101+ Introduction to Physics (4) OR
PHY111+ General Physics I (4)............................................................ 3-4

+ Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.
The Certificate of Completion in Diagnostic Medical Sonography is designed for students who wish to explore the field of sonography, as well as those who have made a career decision to seek certification from the American Registry of Diagnostic Medical Sonographers (ARDMS). Diagnostic medical sonographers are highly specialized members of the health care team who provide patient services using ultrasound under the direction of a physician. Sonographers provide critical diagnostic ultrasound imaging by operating equipment and performing examinations for medical diagnosis. Sonographers have an in-depth knowledge of physics, disease processes, physiology, cross-sectional anatomy, positioning and sonographic techniques necessary to create ultrasound images. Knowledge of darkroom techniques, equipment maintenance, record keeping and film processing are also part of the job.

Careers in the field of diagnostic sonography can be found in hospitals, clinics, doctors’ offices, and mobile imaging centers. Research, applications, teaching and marketing may be available to sonographers who wish to explore careers in business or industry.

Educational Information: The Diagnostic Medical Sonography program is open to all students who successfully complete the program prerequisites. Full-time day students must apply to the program and be accepted prior to registering for course offerings. The full-time program is 21 months in length. Clinical affiliations include a cooperative effort with a number of area hospitals, clinics and doctors’ offices. Clinical training is required by the ARDMS prior to sitting for the registry examination.

Program Notes: 
1. Formal application and admission to the program.
2. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
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4. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites: 
1. Formal application to the Diagnostic Medical Sonography program can be made upon completion of the required prerequisite courses.
2. Successful completion of the following courses with a minimum, cumulative GPA of 3.0.
3. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
4. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes may result in cancellation of enrollment.

Certificate & Degree Programs 2019-2020

RADIOLOGY - DIAGNOSTIC MEDICAL SONOGRAPHY

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Bryan Dodd

The Certificate of Completion (CCL) in Diagnostic Medical Sonography program is designed for students who wish to explore the field of sonography, as well as those who have made a career decision to seek certification from the American Registry of Diagnostic Medical Sonographers (ARDMS). Diagnostic medical sonographers are highly specialized members of the health care team who provide patient services using ultrasound under the direction of a physician. Sonographers provide critical diagnostic ultrasound imaging by operating equipment and performing examinations for medical diagnosis. Sonographers have an in-depth knowledge of physics, disease processes, physiology, cross-sectional anatomy, positioning and sonographic techniques necessary to create ultrasound images. Knowledge of darkroom techniques, equipment maintenance, record keeping and film processing are also part of the job.

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Educational Information: The Diagnostic Medical Sonography program is open to all students who successfully complete the program prerequisites. Full-time day students must apply to the program and be accepted prior to registering for course offerings. The full-time program is 21 months in length. Clinical affiliations include a cooperative effort with a number of area hospitals, clinics and doctors’ offices. Clinical training is required by the ARDMS prior to sitting for the registry examination.

Program Notes: 
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4. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites: 
1. Formal application to the Diagnostic Medical Sonography program can be made upon completion of the required prerequisite courses.
2. Successful completion of the following courses with a minimum, cumulative GPA of 3.0.
3. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
4. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes may result in cancellation of enrollment.

Certificate & Degree Programs 2019-2020
### Required Courses

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<tr>
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<th>Course Title</th>
<th>Credits</th>
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<tr>
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<td>DMS120+</td>
<td>Ultrasound Imaging: Abdominal Procedures I</td>
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<tr>
<td>DMS130+</td>
<td>Ultrasound Imaging: OB/GYN Procedures</td>
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<td>DMS150LL+</td>
<td>Sonographic Principles and Instrumentation I Laboratory</td>
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<td>DMS155+</td>
<td>Clinical Practicum I</td>
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<td>DMS161+</td>
<td>Clinical Practicum II- AA</td>
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<td>DMS171+</td>
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<td>DMS172+</td>
<td>Clinical Practicum III- AB</td>
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<td>Ultrasound Case Studies: Part III</td>
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<td>DMS261+</td>
<td>Clinical Practicum IV- AA</td>
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<td>Clinical Practicum IV- AB</td>
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<td>DMS270+</td>
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### Restricted Electives

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<td>DMS284+</td>
<td>Ultrasound Registry Preparation: Vascular Imaging</td>
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<td>DMS286+</td>
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### Required Courses

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<td>DMS120+</td>
<td>Ultrasound Imaging: Abdominal Procedures I</td>
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<td>Ultrasound Imaging: Abdominal Procedures I Laboratory</td>
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<td>Ultrasound Imaging: Abdominal Procedures II</td>
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<td>Ultrasound Imaging: OB/GYN Procedures</td>
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<td>DMS145+</td>
<td>Clinical Pathology for Diagnostic Imaging</td>
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<td>DMS150+</td>
<td>Sonographic Principles and Instrumentation I</td>
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<td>DMS155+</td>
<td>Clinical Practicum I</td>
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<td>DMS270+</td>
<td>Clinical Practicum V- AA</td>
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<td>DMS263+</td>
<td>Vascular Clinical Practicum I (2) OR</td>
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<td>DMS271+</td>
<td>Vascular Clinical Practicum II (2)</td>
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<td>Vascular Clinical Practicum II (2)</td>
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<td>DMS281+</td>
<td>Ultrasound Registry Preparation Seminar: Physics and Instrumentation</td>
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<td>Ultrasound Registry Preparation Seminar: Abdominal and Small Parts Imaging</td>
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<td>DMS283+</td>
<td>Ultrasound Registry Preparation Seminar: Obstetrics, Gynecology, and Neonate</td>
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<td>DMS210+</td>
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<tr>
<td>DMS286+</td>
<td>Advanced Vascular Technology</td>
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</tbody>
</table>

### Admission Criteria:

1. The applicant must be a Registered Diagnostic Medical Sonographer (RDMS) in general sonography or Registered Diagnostic Cardiac Sonographer (RDQS) for echocardiography.
2. Formal application and admission to the program.
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Program Prerequisites: None

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<tr>
<td>DMS236+</td>
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<td>DMS273+</td>
<td>Vascular Clinical Practicum II</td>
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<td>DMS286LL+</td>
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<td>DMS273+</td>
<td>Vascular Clinical Practicum II</td>
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Certificate & Degree Programs 2019-2020

**RADIOLOGY - DIAGNOSTIC MEDICAL SONOGRAPHY: VASCULAR TECHNOLOGY**

**CERTIFICATE OF COMPLETION IN DIAGNOSTIC MEDICAL SONOGRAPHY: VASCULAR TECHNOLOGY**
(13-19 CREDITS; CODE 5872N)

- **Admission Requirements:**
  1. The applicant must have a high school diploma or General Educational Development (GED) certificate.
  2. The applicant must pass the COMPASS test in Reading and Writing with scores of 26 or better.
  3. The applicant must pass the COMPASS test in Algebra with a score of 31 or better.
  4. The applicant must have a minimum overall GPA of 2.00.

**Program Prerequisites:**

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<tr>
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**Required Courses**

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<tr>
<td>DMS210+</td>
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<td>DMS235+</td>
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<td>DMS255+</td>
<td>Pediatric Sonography (3)</td>
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** Restricted Electives**

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<th>Course Title</th>
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<tr>
<td>DMS245+</td>
<td>Neurosonography (1)</td>
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</tr>
<tr>
<td>DMS255+</td>
<td>Pediatric Sonography (3)</td>
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</table>

- **Program Director:** Bryan Dodd

To qualify, students must earn a grade of C or better in all courses required within the program.

Division: Medical Imaging and Cardiopulmonary Sciences

**Evaluations & Assessment:**

- Each student is responsible for their own academic success.
- The program director and faculty will ensure the highest quality of education.
- The program director will monitor student progress and provide appropriate feedback.

Educational Information:

- Diagnostic medical vascular technologists are highly specialized members of the health care team who provide patient services using ultrasound under the direction of a physician. Vascular technologists provide care essential to diagnostic ultrasound imaging of the vascular system by operating equipment and performing examinations for medical diagnosis. Vascular technologists have an in-depth knowledge of physics, disease processes, physiology, sectional anatomy, positioning and sonographic techniques necessary to perform vascular exams. Careers in the field of diagnostic vascular technology can be found in hospitals, clinics, doctors’ offices, and mobile imaging centers. Research, applications, teaching and marketing may be available to vascular technologists who wish to explore careers in business or industry.

**Program Note:**

Students must earn a grade of C or better for all courses required within the program. This program is not eligible for Title IV Federal Financial Aid.

+ = indicates course has prerequisites and/or co-requisites.
++ = indicates any module suffixed courses.

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**Certificate of Completion in Diagnostic Medical Sonography: Vascular Technology**

**Program Prerequisites:**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>DMI110+</td>
<td>Introduction to Diagnostic Sonography</td>
<td>1</td>
</tr>
<tr>
<td>DMI210+</td>
<td>Ultrasound Imaging: Abdominal Procedures I</td>
<td>3</td>
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<tr>
<td>DMI212+</td>
<td>Ultrasound Imaging: Abdominal Procedures II</td>
<td>3</td>
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<tr>
<td>DMI311+</td>
<td>Ultrasound Imaging: OB/GYN Procedures</td>
<td>4</td>
</tr>
<tr>
<td>DMI314+</td>
<td>Ultrasound Case Studies: Part I</td>
<td>2</td>
</tr>
<tr>
<td>DMI545+</td>
<td>Clinical Pathology for Diagnostic Imaging</td>
<td>1</td>
</tr>
<tr>
<td>DMS130+</td>
<td>Ultrasound Imaging: OB/GYN Procedures</td>
<td>2</td>
</tr>
<tr>
<td>DMS145+</td>
<td>Clinical Practicum I</td>
<td>1</td>
</tr>
<tr>
<td>DMS150+</td>
<td>Sonographic Principles and Instrumentation I</td>
<td>2</td>
</tr>
<tr>
<td>DMS150LL+</td>
<td>Sonographic Principles and Instrumentation Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>DMS151+</td>
<td>Sonographic Principles and Instrumentation II</td>
<td>2</td>
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<tr>
<td>DMS155+</td>
<td>Clinical Practicum I</td>
<td>1</td>
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<tr>
<td>DMS156+</td>
<td>Clinical Practicum II-AB</td>
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<tr>
<td>DMS161+</td>
<td>Clinical Practicum II-AA</td>
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<tr>
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<td>DMS172+</td>
<td>Clinical Practicum III-AB</td>
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<tr>
<td>DMS225+</td>
<td>High Risk Obstetric/Gynecology Sonography</td>
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<tr>
<td>DMS240+</td>
<td>Ultrasound Case Studies: Part II</td>
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<td>DMS241+</td>
<td>Ultrasound Case Studies: Part III</td>
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</tr>
<tr>
<td>DMS246+</td>
<td>Clinical Practicum IV-AB</td>
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</tr>
<tr>
<td>DMS271+</td>
<td>Clinical Practicum V-AB</td>
<td>2</td>
</tr>
<tr>
<td>DMS273+</td>
<td>Vascular Clinical Practicum I (2)</td>
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<tr>
<td>DMS274+</td>
<td>Ultrasound Registry Preparation Seminar: Physics and Instrumentation</td>
<td>1</td>
</tr>
<tr>
<td>DMS275+</td>
<td>Ultrasound Registry Preparation Seminar: Abdominal and Small Parts Imaging</td>
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<tr>
<td>DMS276+</td>
<td>Ultrasound Registry Preparation Seminar: Obstetrics, Gynecology, and Neonate</td>
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<td>DMS284+</td>
<td>Ultrasound Registry Preparation: Vascular Imaging</td>
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<tr>
<td>DMS285+</td>
<td>Intermediate Vascular Technology</td>
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<tr>
<td>DMS286+</td>
<td>Advanced Vascular Technology</td>
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<tr>
<td>DMS286LL+</td>
<td>Advanced Vascular Technology Laboratory</td>
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**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DMS210+</td>
<td>Concepts of Vascular Imaging</td>
<td>2</td>
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<tr>
<td>DMS210LL+</td>
<td>Concepts of Vascular Imaging Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>DMS210+</td>
<td>Concepts of Vascular Imaging Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>DMS225+</td>
<td>High Risk Obstetric/Gynecology Sonography</td>
<td>1</td>
</tr>
<tr>
<td>DMS240+</td>
<td>Ultrasound Case Studies: Part II</td>
<td>2</td>
</tr>
<tr>
<td>DMS241+</td>
<td>Ultrasound Case Studies: Part III</td>
<td>2</td>
</tr>
<tr>
<td>DMS246+</td>
<td>Clinical Practicum IV-AB</td>
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<tr>
<td>DMS271+</td>
<td>Clinical Practicum V-AB</td>
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<tr>
<td>DMS273+</td>
<td>Vascular Clinical Practicum I (2)</td>
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<tr>
<td>DMS276+</td>
<td>Advanced Vascular Technology</td>
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<tr>
<td>DMS276LL+</td>
<td>Advanced Vascular Technology Laboratory</td>
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</tbody>
</table>

**Restricted Electives**

- **Program Prerequisites:**
- **Admission Criteria:**
- **Program Note:**
- **Educational Information:**
- **Required Courses:**
- **Restricted Electives:**

---

Note: The Program Director reserves the right to make changes to the curriculum as deemed necessary without prior notification to students.
Students preparing for the Sonography Principles and Instrumentation (SPI) Exam may complete zero (0) to six (6) credits with permission of the Diagnostic Medical Sonography Program Director.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS150+</td>
<td>Sonographic Principles and Instrumentation I</td>
<td>2</td>
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<tr>
<td>DMS150LL+</td>
<td>Sonographic Principles and Instrumentation Laboratory</td>
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<tr>
<td>DMS151+</td>
<td>Sonographic Principles and Instrumentation II</td>
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</tr>
<tr>
<td>DMS281+</td>
<td>Ultrasound Registry Preparation Seminar: Physics and Instrumentation</td>
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</table>

**RADIODIAGNOSIS** - **MEDICAL RADIOGRAPHY**

**ASSOCIATE IN APPLIED SCIENCE DEGREE IN MEDICAL RADIOGRAPHY**

(74-94.5 CREDITS; CODE 3582)

To qualify, students must earn a grade of C or better in all courses required within the program.

Division: Medical Imaging and Cardiopulmonary Sciences

Program Director: Brad Johnson

The Associate in Applied Science (AAS) in Medical Radiography program provides training in patient services using imaging modalities, as directed by physicians qualified to order and/or perform radiologic procedures. Curriculum includes training in patient care essential to radiologic procedures; this includes exercising judgment when performing medical imaging procedures. The program focuses on principles of radiation protection for the patient, self, and others, anatomy, positioning, radiographic techniques, maintaining equipment, processing film, the digital environment, keeping patient records, and performing various office tasks.

Program Note:

Students with other related health care experiences not listed in the following Program Prerequisites options may request an evaluation for course competency equivalence through the Gateway Health Core Curriculum Coordinator by calling (602) 286-8509.

HCC130 requirement in Program Prerequisites area is preferred to be met by the 3-credit course.

**Admission Criteria:**

1. Formal application and admission to the program.
2. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
3. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
4. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

**Program Prerequisites:**

Students must earn a minimum GPA of 3.0 in Part I Program Prerequisites.

Part I Program Prerequisites courses must be completed before students are eligible to apply to the program and be placed in the Medical Radiography queue.

Students selecting BIO201 and BIO202 must complete the prerequisite courses BIO156 Introductory Biology for Allied Health (4) OR BIO181 General Biology (Majors) (4) OR One year high school biology with a grade of C or better.

<table>
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<th>Course Title</th>
<th>Credits</th>
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<td>BIO201+</td>
<td>Human Anatomy and Physiology (4) AND</td>
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<tr>
<td>BIO202+</td>
<td>Human Anatomy and Physiology II (4)</td>
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<tr>
<td>COM100</td>
<td>Introduction to Human Communication (3) OR</td>
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<tr>
<td>COM110</td>
<td>Interpersonal Communication (3) OR</td>
<td></td>
</tr>
<tr>
<td>COM225+</td>
<td>Public Speaking (3) OR</td>
<td></td>
</tr>
<tr>
<td>COM230</td>
<td>Small Group Communication (3)</td>
<td></td>
</tr>
<tr>
<td>CRE101+</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
<td>0-3</td>
</tr>
</tbody>
</table>

**Program Notes:**

Students must earn a grade of C or better for all courses within the program. + indicates course has prerequisite and/or corequisites.

**Program Notes:**

Students must earn a grade of C or better for all courses within the program. + indicates course has prerequisite and/or corequisites.
The Certificate of Completion (CCL) in Magnetic Resonance Imaging program offers graduate Radiologic Technologists, Radiation Therapists, Nuclear Medicine Technologists, and Diagnostic Medical Sonographers the opportunity to complete both didactic coursework and clinical skills experience necessary to prepare to meet eligibility for the professional certification in this field. The program focuses on specific skills and knowledge necessary to become proficient in this field.

Program Notes:
Students must earn a grade of C or better for all courses within the program. + indicates course has prerequisite and/or corequisites.

Admission Criteria:
1. Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy, OR Certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine, OR Certified by American Registry of Diagnostic Medical Sonography (ARDMS) or ARRT in Diagnostic Medical Sonography, OR Radiography, Radiation Therapist, Nuclear Medicine or Sonography student currently enrolled at GateWay, or registry eligible graduate.
2. Admission to the program is required.
3. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
4. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
5. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites: None

Required Courses .................................................................................................................................................... 18

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS150+</td>
<td>Sonographic Principles and Instrumentation I</td>
<td>2</td>
</tr>
<tr>
<td>DMS150L+</td>
<td>Sonographic Principles and Instrumentation Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>DMS151+</td>
<td>Sonographic Principles and Instrumentation II</td>
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</tr>
<tr>
<td>DMS281+</td>
<td>Ultrasound Registry Preparation Seminar: Physics and Instrumentation</td>
<td>1</td>
</tr>
<tr>
<td>DMI/DMS/ICE220+</td>
<td>Sectional Anatomy</td>
<td>3</td>
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<tr>
<td>ICE225+</td>
<td>Fundamentals of Magnetic Resonance Imaging (MRI)</td>
<td>1</td>
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<td>ICE229+</td>
<td>Magnetic Resonance (MR) Multi-Planar Sectional Anatomy</td>
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<td>ICE264+</td>
<td>MRI Physics, Instrumentation and Safety</td>
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<td>ICE268+</td>
<td>MRI Advanced Imaging Practicum</td>
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</tr>
<tr>
<td>ICE269+</td>
<td>Magnetic Resonance Procedure Protocols</td>
<td>3</td>
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<td>ICE272+</td>
<td>Magnetic Resonance Pathology</td>
<td>3</td>
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<tr>
<td>ICE292+</td>
<td>MRI Board Exam Review Preparation</td>
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<tr>
<td>HCC130</td>
<td>requirement in Program Prerequisites area is preferred to be met by the 3-credit course.</td>
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</tr>
</tbody>
</table>

Equivalent by Assessment on Placement Test (0)

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.

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Certificate & Degree Programs 2019-2020

RADIOLOGY - MEDICAL RADIOGRAPHY
ASSOCIATE IN APPLIED SCIENCE DEGREE IN MEDICAL RADIOGRAPHY
(74-94.5 CREDITS; CODE 3582)

To qualify, students must earn a grade of C or better in all courses required within the program. Division: Medical Imaging and Cardiopulmonary Sciences

Program Director: Brad Johnson

The Associate in Applied Science (AAS) in Medical Radiography program provides training in patient services using imaging modalities, as directed by physicians qualified to order and/or perform radiologic procedures. Curriculum includes training in patient care essential to radiologic procedures; this includes exercising judgment when performing medical imaging procedures. The program focuses on principles of radiation protection for the patient, self, and others, anatomy, positioning, radiographic techniques, maintaining equipment, processing film, the digital environment, keeping patient records, and performing various office tasks.

Program Notes:
Students must earn a grade of C or better for all courses required within the program. + indicates course has prerequisite and/or corequisites.

Students with other related health care experiences not listed in the following Program Prerequisites options may request an evaluation for course competency equivalence through the Gateway Health Care Curriculum Coordinator by calling (602) 286-8509.

HCC130 requirement in Program Prerequisites area is preferred to be met by the 3-credit course.

Admission Criteria:
1. Formal application and admission to the program.
2. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
3. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
4. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites:.................................................................................................................................... 18

Students must earn a minimum GPA of 3.0 in Part I Program Prerequisites.

Part I Program Prerequisite courses must be completed before students are eligible to apply to the program and be placed in the Medical Radiography queue.

Students selecting BIO201 and BIO202 must complete the prerequisite courses BIO116 Introductory Biology for Allied Health (4) OR BIO181 General Biology (Majors) / (4) OR one year high school biology with a grade of C or better.

<table>
<thead>
<tr>
<th>Part 1</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIO160</td>
<td>Introduction to Human Anatomy and Physiology (4) OR</td>
</tr>
<tr>
<td>BIO201+</td>
<td>Human Anatomy and Physiology (4) AND</td>
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<tr>
<td>BIO202+</td>
<td>Human Anatomy and Physiology II (4)</td>
</tr>
<tr>
<td>COM100</td>
<td>Introduction to Human Communication (3) OR</td>
</tr>
<tr>
<td>COM110</td>
<td>Interpersonal Communication (3) OR</td>
</tr>
<tr>
<td>COM225+</td>
<td>Public Speaking (3) OR</td>
</tr>
<tr>
<td>COM230</td>
<td>Small Group Communication (3)</td>
</tr>
<tr>
<td>CRE101+</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
</tr>
<tr>
<td>CRE102+</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
</tr>
</tbody>
</table>

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.

253
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENG101+</td>
<td>First-Year Composition (3) OR</td>
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</tr>
<tr>
<td>ENG107+</td>
<td>First-Year Composition for ESL (3)</td>
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</table>

Student must be eligible to enroll in MAT120, MAT121 or MAT122 by Satisfactory score on District placement exam OR Satisfactory completion of a higher level mathematics course.

After completion of Part I program prerequisites, the student is eligible to complete the application process for the Medical Radiography program to be placed in the Medical Radiography queue.

**Part 2:** 1-7.5

After acceptance into program and before the start of required courses, students must complete the following courses:

<table>
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<th>Course Title</th>
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</thead>
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<tr>
<td>DMI100</td>
<td>Introduction to Diagnostic Medical Radiography: Professionalism and Patient Care</td>
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</tr>
<tr>
<td>HCC130 or HCC130AA-AF and HCC145 or HCC145AA-AC or HCC146</td>
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</table>

DMI100 is Diagnostic Medical Radiography: Professionalism and Patient Care.

HCC130 or HCC130AA-AF and HCC145 or HCC145AA-AC or HCC146 may be waived by GateWay Health Care Curriculum Coordinator (602-286-8509) based on relevant healthcare experience or equivalent course education.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>HCC130</td>
<td>Fundamentals in Health Care Delivery (3) OR</td>
<td></td>
</tr>
<tr>
<td>HCC130AA</td>
<td>Health Care Today (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AB</td>
<td>Workplace Behaviors in Health Care (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AC</td>
<td>Personal Wellness and Safety (0.5) AND</td>
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</tr>
<tr>
<td>HCC130AD</td>
<td>Communication and Teamwork in Health Care Organizations (0.5) AND</td>
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<tr>
<td>HCC130AE</td>
<td>Legal Issues in Health Care (0.5) AND</td>
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<tr>
<td>HCC130AF</td>
<td>Decision Making in the Health Care Setting (0.5) OR</td>
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<td>Permission of GateWay Health Care Curriculum Coordinator (0)</td>
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<tr>
<td>HCC145</td>
<td>Medical Terminology for Health Care Professionals (3) OR</td>
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<td>HCC145AA</td>
<td>Medical Terminology for Health Care Professionals I (1) AND</td>
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<tr>
<td>HCC145AB</td>
<td>Medical Terminology for Health Care Professionals II (1) AND</td>
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<tr>
<td>HCC145AC</td>
<td>Medical Terminology for Health Care Professionals III (1) OR</td>
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<tr>
<td>HCC146</td>
<td>Common Medical Terminology for Health Care Professionals (2) OR</td>
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<td>HCC/RES109</td>
<td>CPR for Health Care Provider (0.5) OR</td>
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<td>CPR Certification (0)</td>
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<td>HCC102</td>
<td>Fundamentals of Radiation Physics</td>
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<td>HCC103</td>
<td>Introduction to Imaging</td>
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<td>HCC104+</td>
<td>Radiography Practicum I</td>
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<tr>
<td>HCC105+</td>
<td>Radiographic Positioning I Laboratory</td>
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<tr>
<td>HCC106+</td>
<td>Radiographic Image Evaluation I</td>
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<td>HCC107+</td>
<td>Principles of Digital Imaging</td>
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<td>HCC112+</td>
<td>Radiographic Positioning II</td>
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<td>HCC114+</td>
<td>Radiography Practicum II</td>
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<td>HCC118+</td>
<td>Radiography Practicum III</td>
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<td>HCC124+</td>
<td>Radiography Practicum IV</td>
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<td>HCC126+</td>
<td>Advanced Radiographic Procedures</td>
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<td>HCC127+</td>
<td>Radiography Practicum V</td>
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<td>HCC128+</td>
<td>Radiation Biology</td>
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<tr>
<td>HCC130+</td>
<td>Medical Terminology for Health Care Professionals (3) OR</td>
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<tr>
<td>HCC130AA-AF</td>
<td>Health Care Today (0.5) AND</td>
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<td>HCC130AB</td>
<td>Workplace Behaviors in Health Care (0.5) AND</td>
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<td>HCC130AC</td>
<td>Personal Wellness and Safety (0.5) AND</td>
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<td>Communication and Teamwork in Health Care Organizations (0.5) AND</td>
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<td>Legal Issues in Health Care (0.5) AND</td>
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<td>HCC130AF</td>
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<tr>
<td>HCC146</td>
<td>Common Medical Terminology for Health Care Professionals (2) OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permission of GateWay Health Care Curriculum Coordinator (0)</td>
<td>0-3</td>
</tr>
<tr>
<td>HCC/RES109</td>
<td>CPR for Health Care Provider (0.5) OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CPR Certification (0)</td>
<td>0-0.5</td>
</tr>
</tbody>
</table>

Required Courses: 52

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMI110+</td>
<td>Radiographic Positioning I</td>
<td>2</td>
</tr>
<tr>
<td>DMI102+</td>
<td>Radiographic Positioning I Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>DMI103+</td>
<td>Radiographic Image Evaluation I</td>
<td>1</td>
</tr>
<tr>
<td>DMI104+</td>
<td>Radiography Practicum I</td>
<td>3.5</td>
</tr>
<tr>
<td>DMI105+</td>
<td>Fundamentals of Radiation Physics</td>
<td>3</td>
</tr>
<tr>
<td>DMI106+</td>
<td>Radiographic Image Evaluation I</td>
<td>1</td>
</tr>
<tr>
<td>DMI107+</td>
<td>Principles of Digital Imaging</td>
<td>4</td>
</tr>
<tr>
<td>DMI112+</td>
<td>Radiographic Positioning II</td>
<td>3</td>
</tr>
<tr>
<td>DMI114+</td>
<td>Radiography Practicum II</td>
<td>3</td>
</tr>
<tr>
<td>DMI118+</td>
<td>Contrast Media Procedures</td>
<td>2.5</td>
</tr>
<tr>
<td>DMI124+</td>
<td>Radiography Practicum III</td>
<td>3</td>
</tr>
<tr>
<td>DMI204+</td>
<td>Radiography Practicum IV</td>
<td>3</td>
</tr>
<tr>
<td>DMI212+</td>
<td>Advanced Radiographic Procedures</td>
<td>1</td>
</tr>
<tr>
<td>DMI214+</td>
<td>Radiography Practicum V</td>
<td>4.5</td>
</tr>
<tr>
<td>DMI215+</td>
<td>Radiation Biology</td>
<td>2</td>
</tr>
<tr>
<td>DMI216+</td>
<td>Radiographic Image Evaluation II</td>
<td>1</td>
</tr>
<tr>
<td>DMI217+</td>
<td>Advanced Digital Imaging</td>
<td>2.5</td>
</tr>
<tr>
<td>DMI222+</td>
<td>Advanced Radiologic Pathology</td>
<td>1</td>
</tr>
<tr>
<td>DMI224+</td>
<td>Radiography Practicum VI</td>
<td>5</td>
</tr>
<tr>
<td>DMI227+</td>
<td>Radiography Seminar</td>
<td>1</td>
</tr>
<tr>
<td>HCC218+</td>
<td>Venous Access for Diagnostic Agents and Pharmaceuticals</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Restricted Electives: 0-4

Student may select from zero (0) to four (4) credits of restricted electives from the courses below.

DMI/DMS/ICE220+ Sectoral Anatomy

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMI/ICE223+</td>
<td>Introduction to Computed Tomography (1) OR</td>
<td>3</td>
</tr>
<tr>
<td>ICE233+</td>
<td>Fundamentals of Magnetic Resonance Imaging (MRI) (1)</td>
<td>1</td>
</tr>
</tbody>
</table>

General Education Requirement: 11-14

Three (3) credits of First Year Composition are met by ENG101 or ENG107 in Program Prerequisites area.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG101+</td>
<td>First-Year Composition (3) OR</td>
<td></td>
</tr>
<tr>
<td>ENG108+</td>
<td>First-Year Composition for ESL (3)</td>
<td></td>
</tr>
<tr>
<td>MAT120+</td>
<td>Intermediate Algebra (5) OR</td>
<td></td>
</tr>
<tr>
<td>MAT121+</td>
<td>Intermediate Algebra (4) OR</td>
<td></td>
</tr>
<tr>
<td>MAT122+</td>
<td>Intermediate Algebra (3) OR</td>
<td></td>
</tr>
</tbody>
</table>

Any approved general education course from the Humanities, Arts and Design area.

Any approved general education course from the Social-Behavioral Sciences area.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MST157++/+</td>
<td>Any Active Directory Windows Server Configuration course not selected in the Required Courses area</td>
<td>3-4</td>
</tr>
<tr>
<td>MST244+</td>
<td>Microsoft SQL Server Administration</td>
<td>3</td>
</tr>
<tr>
<td>MST259+</td>
<td>Designing Windows Network Security</td>
<td>3</td>
</tr>
<tr>
<td>MST298A+</td>
<td>Any Special Projects course</td>
<td>1</td>
</tr>
</tbody>
</table>

General Education Requirements: 22-25

MET101+    | First-Year Composition (3) OR                    |         |
| MET107+    | First-Year Composition for ESL (3) AND           |         |
| MET102+    | First-Year Composition (3) OR                    |         |
| MET108+    | First-Year Composition for ESL (3)              |         |

Any approved general education course from the Oral Communication area.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRE101+</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equivalent as indicated by assessment (0)</td>
<td>0-3</td>
</tr>
</tbody>
</table>

Any approved general education course from the Mathematics area.

Any approved general education course from the Humanities, Arts and Design area.

Any approved general education course from the Social-Behavioral Sciences area.

Any approved general education course from the Natural Sciences area.
Certificate & Degree Programs 2019-2020

ENG101+ First-Year Composition (3) OR
ENG107+ First-Year Composition for ESL (3)

Student must be enrolled in MAT120, MAT121 or MAT122 by Satisfactory score on District placement exam OR Satisfactory completion of a higher level mathematics course

After completion of Part I program prerequisites, the student is eligible to complete the application process for the Medical Radiography program to be placed in the Medical Radiography queue.

Part 2: 1-7.5

After acceptance into program and before the start of required courses, students must complete the following courses:

DMI100 Introduction to Diagnostic Medical Radiography: Professionalism and Patient Care
HCC130 or HCC130AA and HCC145 or HCC145AA or AC 146 may be waived by Gateway Health Care Curriculum Coordinator (602-286-8509) based on relevant healthcare experience or equivalent course education.

HCC130 Fundamentals in Health Care Delivery (3) OR
HCC130AA Healthcare Today (0.5) AND
HCC130AB Workplace Behaviors in Health Care (0.5) AND
HCC130AC Personal Wellness and Safety (0.5) AND
HCC130AD Communication and Teamwork in Health Care Organizations (0.5) AND
HCC130AE Legal Issues in Health Care (0.5) AND
HCC130AF Decision Making in the Health Care Setting (0.5) OR Permission of Gateway Health Care Curriculum Coordinator (0) 0-3

HCC145 Medical Terminology for Health Care Professionals (3) OR
HCC145AA Medical Terminology for Health Care Professionals I (1) AND
HCC145AB Medical Terminology for Health Care Professionals II (1) AND
HCC145AC Medical Terminology for Health Care Professionals III (1) OR
HCC146 Common Medical Terminology for Health Care Professionals (2) OR Permission of Gateway Health Care Curriculum Coordinator (0) 0-3

HCC/RES109 CPR for Health Care Provider (0.5) OR Proof of Current American Heart Association Health Care Provider CPR Certification (0)

Required Courses 52

DMI101+ Radiation Safety 2
DMI102+ Radiographic Positioning I 3
DMI102L+ Radiographic Positioning I Laboratory 1
DMI103+ Introduction to Imaging 1.5
DMI104+ Radiography Practicum I 3.5
DMI105+ Fundamentals of Radiation Physics 3
DMI106+ Radiographic Image Evaluation I 1
DMI107+ Principles of Digital Imaging 4
DMI112+ Radiographic Positioning II 3
DMI114+ Radiography Practicum II 3
DMI118+ Contrast Media Procedures 2.5
DMI124+ Radiography Practicum III 3
DMI204+ Radiography Practicum IV 3
DMI212+ Advanced Radiographic Procedures 1
DMI214+ Radiography Practicum V 4.5
DMI215+ Radiation Biology 2

+ Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.

Required Courses 52

HCC145 Medical Terminology for Health Care Professionals (3) OR
HCC145AA Medical Terminology for Health Care Professionals I (1) AND
HCC145AB Medical Terminology for Health Care Professionals II (1) AND
HCC145AC Medical Terminology for Health Care Professionals III (1) OR
HCC146 Common Medical Terminology for Health Care Professionals (2) OR Permission of Gateway Health Care Curriculum Coordinator (0) 0-3

HCC/RES109 CPR for Health Care Provider (0.5) OR Proof of Current American Heart Association Health Care Provider CPR Certification (0)

Required Courses 52

DMI101+ Radiation Safety 2
DMI102+ Radiographic Positioning I 3
DMI102L+ Radiographic Positioning I Laboratory 1
DMI103+ Introduction to Imaging 1.5
DMI104+ Radiography Practicum I 3.5
DMI105+ Fundamentals of Radiation Physics 3
DMI106+ Radiographic Image Evaluation I 1
DMI107+ Principles of Digital Imaging 4
DMI112+ Radiographic Positioning II 3
DMI114+ Radiography Practicum II 3
DMI118+ Contrast Media Procedures 2.5
DMI124+ Radiography Practicum III 3
DMI204+ Radiography Practicum IV 3
DMI212+ Advanced Radiographic Procedures 1
DMI214+ Radiography Practicum V 4.5
DMI215+ Radiation Biology 2

+ Indicates course has prerequisites and/or co-requisites.
++ Indicates any module suffixed courses.
RADIOLOGY - MUSCULOSKELETAL SONOGRAPHY
CERTIFICATE OF COMPLETION IN MUSCULOSKELETAL SONOGRAPHY
(20 CREDITS; CODE 5916N)

To qualify, students must earn a grade of C or better in all courses within the program.
Program Director: Bryan Dodd

The Certificate of Completion (CCL) in Musculoskeletal Sonography program is designed for students who wish to explore the field of sonography, as well as those who have made a career decision to seek certification from the American Registry of Diagnostic Medical Sonographers (ARDMS) or the Alliance for Physician Certification and Advancement (APCA).

Diagostic medical sonographers are highly specialized members of the health care team who provide patient services using ultrasound under the direction of a physician. Sonographers provide care essential to diagnosis using equipment and performing examinations for medical diagnosis. Sonographers have an in-depth knowledge of physics, disease processes, physiology, cross-sectional anatomy, positioning and sonographic techniques necessary to create ultrasonic images. Knowledge of darkroom techniques, equipment maintenance, record keeping, and film processing are also part of the job.

Careers utilizing musculoskeletal diagnostic ultrasound include physicians, physician assistants, nurse practitioners, physical therapists, and sonographers among others. Research, applications, teaching, and marketing may be available to those who wish to explore careers in business or industry.

Program Notes:
- Students must earn a grade of C or better for all courses required within the program.
- + indicates course has prerequisites and/or corequisites.
- ++ indicates any module-suffixed courses.

Admission Criteria:
1. Formal application and admission to the program.
2. Background check requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
3. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
4. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes may result in cancellation of enrollment.
5. This program is open to credentialed physicians, physical therapist, physician assistants, sonographers, and practitioners working in the musculoskeletal field.

Program Prerequisites: None

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMS148+</td>
<td>Introduction to Musculoskeletal Sonographic Imaging</td>
<td>1</td>
</tr>
<tr>
<td>DMS250+</td>
<td>Musculoskeletal Sonography and Small Parts</td>
<td>2</td>
</tr>
<tr>
<td>DMS252+</td>
<td>Musculoskeletal Procedures I</td>
<td>4</td>
</tr>
<tr>
<td>DMS254+</td>
<td>Musculoskeletal Procedures II</td>
<td>4</td>
</tr>
<tr>
<td>DMS265+</td>
<td>Musculoskeletal Clinical Practicum</td>
<td>4</td>
</tr>
<tr>
<td>DMS267+</td>
<td>Musculoskeletal Case Studies</td>
<td>1</td>
</tr>
<tr>
<td>PTA152+</td>
<td>Musculoskeletal Kinesiology and Assessment Techniques in Sonographic Imaging</td>
<td>4</td>
</tr>
</tbody>
</table>

Program Notes:
- Students must earn a grade of C or better for all courses required within the program.
- + indicates course has prerequisite and/or corequisites.
- ++ indicates any module-suffixed courses.

Admission Criteria:
1. Formal application can be made at any time.
2. Formal admission to the program is required.
3. Background check requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check Standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
4. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
5. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO160</td>
<td>Introduction to Human Anatomy and Physiology (4) OR</td>
<td>16-26.5</td>
</tr>
<tr>
<td>BIO201+</td>
<td>Human Anatomy and Physiology (4) AND</td>
<td></td>
</tr>
</tbody>
</table>

Program Notes:
- Students are eligible to apply to the Respiratory Care program at any time to be placed in the program queue. Program Prerequisite courses must be completed prior to the start of the program of study.

Certificate & Degree Programs 2019-2020
RADIOLOGY - MUSCULOSKELETAL SONOGRAPHY
CERTIFICATE OF COMPLETION IN MUSCULOSKELETAL SONOGRAPHY
(20 CREDITS; CODE 5916N)

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Bryan Dodd

The Certificate of Completion (CCL) in Musculoskeletal Sonography program is designed for students who wish to explore the field of sonography, as well as those who have made a career decision to seek certification from the American Registry of Diagnostic Medical Sonographers (ARDMS) or the Alliance for Physician Certification and Advancement (APCA). Diagnostic medical sonographers are highly specialized members of the health care team who provide patient services using ultrasound under the direction of a physician. Sonographers provide care essential to diagnostic ultrasound imaging by operating equipment and performing examinations for medical diagnosis. Sonographers have an in-depth knowledge of physics, disease processes, physiology, cross-sectional anatomy, positioning and sonoanatomic techniques necessary to create ultrasound images. Knowledge of darkroom techniques, equipment maintenance, record keeping, and film processing are also part of the job.

Careers utilizing musculoskeletal diagnostic ultrasound include physicians, physician assistants, nurse practitioners, physical therapists, and sonographers among others. Research, applications, teaching, and marketing may be available to those who wish to explore careers in business or industry.

Program Notes:
- Students must earn a grade of C or better for all courses required within the program.
- + indicates course has prerequisites and/or corequisites.
- ++ indicates any module suffixed courses.

Admission Criteria:
1. Formal application and admission to the program.
2. Background check requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
3. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
4. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes may result in cancellation of enrollment.
5. This program is open to credentialed physicians, physical therapists, physician assistants, sonographers, and practitioners working in the musculoskeletal field.

Program Prerequisites:
- Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DMS148+</td>
<td>Introduction to Musculoskeletal Sonographic Imaging</td>
<td>1</td>
</tr>
<tr>
<td>DMS150+</td>
<td>Musculoskeletal Sonography and Small Parts</td>
<td>2</td>
</tr>
<tr>
<td>DMS252+</td>
<td>Musculoskeletal Procedures I</td>
<td>4</td>
</tr>
<tr>
<td>DMS254+</td>
<td>Musculoskeletal Procedures II</td>
<td>4</td>
</tr>
<tr>
<td>DMS256+</td>
<td>Musculoskeletal Clinical Practicum</td>
<td>4</td>
</tr>
<tr>
<td>DMS267+</td>
<td>Musculoskeletal Case Studies</td>
<td>1</td>
</tr>
<tr>
<td>PTA152+</td>
<td>Musculoskeletal Kinesiology and Assessment Techniques in Sonographic Imaging</td>
<td>4</td>
</tr>
</tbody>
</table>

Admission Criteria:
1. Formal application can be made at any time.
2. Formal admission to the program is required.
3. Background check requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check Standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Background Check Policy.
4. Clinical health and safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD Clinical Health and Safety Policy.
5. Inability to comply with background check requirements and/or clinical health and safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites: 16-26.5

Students are eligible to apply to the Respiratory Care program at any time to be placed in the program queue. Program Prerequisite courses must be completed prior to the start of the program of study.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO160</td>
<td>Introduction to Human Anatomy and Physiology (4) OR</td>
<td></td>
</tr>
<tr>
<td>BIO201+</td>
<td>Human Anatomy and Physiology (4) AND</td>
<td></td>
</tr>
</tbody>
</table>
### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO102+</td>
<td>Human Anatomy and Physiology II</td>
<td>4-8</td>
</tr>
<tr>
<td>CHM130+</td>
<td>Fundamental Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHM130L+</td>
<td>Fundamental Chemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CRE101+</td>
<td>College Critical Reading and Critical Thinking (3) OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Equivalent as indicated by assessment (0)</td>
<td>0-3</td>
</tr>
<tr>
<td>ENG101+</td>
<td>First-Year Composition (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>ENG107+</td>
<td>First-Year Composition for ESL (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>MAT120+</td>
<td>Intermediate Algebra (5) OR</td>
<td>3</td>
</tr>
<tr>
<td>MAT121+</td>
<td>Intermediate Algebra (4) OR</td>
<td>3</td>
</tr>
<tr>
<td>MAT122+</td>
<td>Intermediate Algebra (3) OR</td>
<td>3</td>
</tr>
</tbody>
</table>

Equivalent course OR satisfactory completion of a higher-level algebra course

Note: Students considering university transfer should take:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG111+</td>
<td>Technical and Professional Writing (3)</td>
<td>3</td>
</tr>
<tr>
<td>ENG108+</td>
<td>First-Year Composition for ESL (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>ENG107+</td>
<td>First-Year Composition (3) OR</td>
<td>3</td>
</tr>
</tbody>
</table>

Any approved general education course from the Oral Communication area

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### Program Prerequisites

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>BIO162</td>
<td>Microbiology Concepts for Allied Health</td>
<td>2</td>
</tr>
<tr>
<td>BIO181+</td>
<td>General Biology (Majors) I (4) OR</td>
<td>2</td>
</tr>
<tr>
<td>BIO201+</td>
<td>Human Anatomy and Physiology I</td>
<td>2</td>
</tr>
<tr>
<td>BIO202+</td>
<td>Human Anatomy and Physiology II</td>
<td>2</td>
</tr>
</tbody>
</table>

Students selecting BIO201 and BIO202, or BIO205 must complete BIO156 or BIO181.

Any approved general education course from the Humanities, Arts and Design area.

Recommend a 3-credit Humanities, Arts and Design (H/U) general studies designation meeting the Awareness Area [C], [G], and/or [H]. See the AGEC Matrix for course designations.

### Program Notes

Students must earn a grade of C or better for all courses required within the program.

++ indicates course has prerequisite and/or corequisites.

### Admission Criteria

1. Formal application and admission to the program.
2. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
3. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
4. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

### Program Prerequisites

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO160</td>
<td>Introduction to Human Anatomy and Physiology (4) OR</td>
<td>4-8</td>
</tr>
<tr>
<td>BIO201+</td>
<td>Human Anatomy and Physiology I</td>
<td>2</td>
</tr>
<tr>
<td>BIO202+</td>
<td>Human Anatomy and Physiology II</td>
<td>4-8</td>
</tr>
</tbody>
</table>

Students selecting BIO201 and BIO202, or BIO205 must complete BIO156 or BIO181.

Any approved general education course from the Humanities, Arts and Design area.

Recommend a 3-credit Humanities, Arts and Design (H/U) general studies designation meeting the Awareness Area [C], [G], and/or [H]. See the AGEC Matrix for course designations.
Certificate & Degree Programs 2019-2020

BIO202+ Human Anatomy and Physiology II (4) .......................................................... 4-8
CHM130+ Fundamental Chemistry ........................................................................... 3
CHM130LL+ Fundamental Chemistry Laboratory ....................................................... 1
CRE101+ College Critical Reading and Critical Thinking (3) OR
Eqvalent as indicated by assessment (0) ................................................................. 0-3
ENG101+ First-Year Composition (3) OR
ENG107+ First-Year Composition for ESL (3) ........................................................... 3
MAT122+ Intermediate Algebra (5) OR
MAT121+ Intermediate Algebra (4) OR
MAT122+ Intermediate Algebra (3) OR
Equivalent course OR satisfactory completion of a higher-level algebra course .......... 3-5

Note: Students considering university transfer should take:
MAT150 College Algebra/Functions ......................................................................... 5
HCC/RES109 CPR for Health Care Provider (0.5) OR
American Heart Association Health Care Provider CPR certification ...................... 0-0.5
HCC145 Medical Terminology for Health Care Professionals (3) OR
HCC146 Common Medical Terminology for Health Care Professionals (2) .......... 2-3

**Required Courses** ........................................................................................................ 56.5
RES118+ Vascular Access in Respiratory Care Practice ........................................... 0.5
RES130+ Respiratory Care Fundamentals I .............................................................. 5
RES131+ Infection Control for Respiratory Care ....................................................... 1
RES133+ Respiratory Care Clinical Seminar ............................................................ 3
RES134+ Respiratory Care Pharmacology I ............................................................. 2
RES136+ Applied Biophysics for Respiratory Care .................................................. 3
RES140+ Respiratory Care Fundamentals II ............................................................. 5
RES142+ Respiratory Care Clinical I ....................................................................... 4
RES144+ Introduction to Mechanical Ventilation .................................................... 1
RES220+ Respiratory Care Fundamentals III ........................................................... 5
RES224+ Pathophysiology for Respiratory Care ..................................................... 2
RES226+ Respiratory Care Clinical II ................................................................. 4
RES230+ Respiratory Care Fundamentals IV ........................................................ 4
RES232+ Respiratory Care Clinical III ................................................................. 4
RES235+ Respiratory Care Pharmacology II ......................................................... 2
RES240+ Respiratory Physiology ............................................................................. 3
RES270+ Neonatal and Pediatric Respiratory Care .................................................. 2
RES280+ Respiratory Care Review ......................................................................... 2
RES291+ Respiratory Care Advanced Life Support .............................................. 1
RES292+ Respiratory Care Pediatric Advanced Life Support ................................... 1
RES297+ Respiratory Care Seminar ........................................................................ 2

**General Education Requirement** ............................................................................. 12

Three (3) credits of First Year Composition are met by ENG101 or ENG107 in the Program Prerequisite area.
ENG102+ First-Year Composition (3) OR
ENG108+ First-Year Composition for ESL (3) OR
ENG111+ Technical and Professional Writing (3) ....................................................... 3

Any approved general education course from the Oral Communication area

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Certificate & Degree Programs 2019-2020

SURGICAL TECHNOLOGY

ASSOCIATE IN APPLIED SCIENCE DEGREE IN SURGICAL TECHNOLOGY
(66-96.5 CREDITS; CODE 3673)

To qualify, students must earn a grade of C or better in all courses within the program.
Division: Health Sciences
Program Director: Susan Tome

The Associate in Applied Science (AAS) in Surgical Technology program is designed for students with an interest in working in the surgical setting and caring for patients that are undergoing a surgical procedure. Students will apply manual dexterity and knowledge of surgical technology under the direction of a surgeon and in conjunction with the surgical team. At the completion of the program, graduates may seek employment in a hospital, surgical center, other outpatient settings, or surgical equipment industry and veterinary services. In addition, the AAS degree includes common core classes with the Hospital Central Services certificate program. Surgical Technology students have the option to complete the 480-hour Hospital Central Service Technology practicum to be eligible to sit for the Certified Registered Central Service Technician (CRCST) certification examination from International Association of Healthcare Central Service Material Management (IAHCSSMM).

Program Notes:

Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisite and/or corequisites.
++ indicates any suffixed courses.

Admission Criteria:

1. Formal application and admission to the program.
2. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD background check policy.
3. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
4. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites .................................................................................................. 10-20
BIO160+ Introduction to Human Anatomy and Physiology (4) OR
BIO201+ Human Anatomy and Physiology I (4) ....................................................... 4-8
BIO156+ Introductory Biology for Allied Health (4) OR
BIO181+ General Biology (Majors) (4) OR
One year high school biology with a grade of C or better (0) ..................................... 0-4
BIO162 Microbiology Concepts for Allied Health (2) OR
BIO205+ Microbiology (4) ......................................................................................... 2-4

* indicates course has prerequisites and/or co-requisites.
** indicates any module suffixed courses.
MAT090+ Developmental Algebra (5) OR
MAT091+ Introductory Algebra (4) OR
MAT092+ Introductory Algebra (3) OR
MAT093+ Introductory Algebra/Math Anxiety Reduction (5) OR
PHY101+ Introduction to Physics................................................................. 4

Required Courses .................................................................... 39-46.5

There are two options available to students to enter the surgical technology program after completing the prerequisite courses.

Option I: (Credits: 39-46.5)

Option I is for students who do NOT have a Certified Registered Central Service Technician (CRCST) certification through the International Association of Healthcare Central Service Material Management (IAHCSMM).

HCC130 or HCC130AA-AF and HCC145 or HCC146 may be waived by GateWay Health Core Curriculum Coordinator (602-286-8509) based on relevant industry experience or equivalent or course education.

HCC130 Fundamentals in Health Care Delivery (3) OR
HCC130AA Health Care Today (0.5) AND
HCC130AC Personal Wellness and Safety (0.5) AND
HCC130AD Communication and Teamwork in Health Care Organizations (0.5) AND
HCC130AE Legal Issues in Health Care (0.5) AND
HCC130AF Decision Making in the Health Care Setting (0.5) OR

Permission of GateWay Health Core Curriculum Coordinator (0).......................... 0.3

HCC145 Medical Terminology for Surgical Technicians (2) OR
HCS/SGT100+ Fundamentals of Surgical Services................................. 5
HCS/SGT101+ Medical Terminology for Surgical Services.................... 1
HCS/SGT102+ Basic Surgical Instrumentation for Surgical Services........ 2
HCS/SGT102+ Advanced Surgical Instruments for Surgical Services........ 2

RDG100A Successful College Reading - Notetaking and Studying for Success (1) OR
Course may be waived by Program Director if student has completed
a bachelor's degree or higher (0) ....................................................... 0-1

SGT135+ Instrument Handling I ......................................................... 1
SGT135+ Instrument Handling II ...................................................... 1
SGT135+ Hospital Central Service Practicum For Surgical Technology... 1
SGT135+ Surgical Procedures ........................................................... 1
SGT156+ Pharmacology for Surgical Technology I ............................. 1
SGT200+ Operating Room Practicum I ................................................. 1
SGT200+ Operating Room Practicum II .............................................. 2
SGT200+ Operating Room Practicum III .......................................... 2
SGT215+ Pharmacology for Surgical Technology II ............................ 1
SGT220+ Operating Room Practicum IV ........................................... 1
SGT225+ Operating Room Practicum V ............................................. 3

Restricted Electives .................................................................... 0-7

Restricted elective course below is optional. Students may select from zero (0) to seven (7) credits from course below
if they desire to sit for the exam for Certified Registered Central Service Technician (CRCST) certification from the
International Association of Healthcare Central Service Material Management (IAHCSMM).

HCC130 Fundamentals in Health Care Delivery (3) OR
HCC130A Health Care Today (0.5) AND
HCC130AC Personal Wellness and Safety (0.5) AND
HCC130AD Communication and Teamwork in Health Care Organizations (0.5) AND
HCC130AE Legal Issues in Health Care (0.5) AND
HCC130AF Decision Making in the Health Care Setting (0.5) OR

Permission of GateWay Health Core Curriculum Coordinator (0).......................... 0-3

HCC/RES109 CPR for Health Care Provider (0.5) OR

Permission of GateWay Health Core Curriculum Coordinator (0).......................... 0-3

HCC145 Medical Terminology for Surgical Professionals (3) OR
HCC146 Common Medical Terminology for Health Care Professionals (2) OR

Permission of GateWay Health Core Curriculum Coordinator (0).......................... 0-3

HCS/SGT101+ Medical Terminology for Surgical Services.................... 1
HCS/SGT102+ Basic Surgical Instrumentation for Surgical Services........ 2
HCS/SGT102+ Advanced Surgical Instruments for Surgical Services........ 2

RDG100A Successful College Reading - Notetaking and Studying for Success (1) OR
Course may be waived by Program Director if student has completed
a bachelor's degree or higher (0) ....................................................... 0-1

SGT135+ Instrument Handling I ......................................................... 1
SGT135+ Instrument Handling II ...................................................... 1
SGT135+ Hospital Central Service Practicum For Surgical Technology... 1
SGT135+ Surgical Procedures ........................................................... 1
SGT156+ Pharmacology for Surgical Technology I ............................. 1
SGT200+ Operating Room Practicum I ................................................. 1
SGT200+ Operating Room Practicum II .............................................. 2
SGT200+ Operating Room Practicum III .......................................... 2
SGT215+ Pharmacology for Surgical Technology II ............................ 1
SGT220+ Operating Room Practicum IV ........................................... 1
SGT225+ Operating Room Practicum V ............................................. 3

Certificate & Degree Programs 2019-2020

260 261

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
**Certificate & Degree Programs 2019-2020**

**MAT090+** Developmental Algebra (5) OR
**MAT091+** Introductory Algebra (4) OR
**MAT092+** Introductory Algebra (3) OR
**MAT093+** Introductory Algebra/Math Anxiety Reduction (5) OR

Satisfactory score on District placement exam OR Satisfactory completion of a higher level mathematics course.

**PHY101+** Introduction to Physics

**Required Courses**

There are two options available to students to enter the surgical technology program after completing the prerequisite courses.

**Option I: (Credits: 39-46.5)**

Option I is for students who DO NOT have a Certified Registered Central Service Technician (CRCST) certification through the International Association of Healthcare Central Service Material Management (IAHCSMM).

HCC130 or HCC130AA-AF and HCC145 or HCC146 may be waived by GateWay Health Core Curriculum Coordinator (602-286-8509) based on relevant industry experience or equivalent or course education.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCC130 Fundamentals in Health Care Delivery (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>HCC130AA Health Care Today (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AB Workplace Behaviors in Health Care (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AC Personal Wellness and Safety (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AD Communication and Teamwork in Health Care Organizations (0.5)</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AE Legal Issues in Health Care (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AF Decision Making in the Health Care Setting (0.5) OR</td>
<td>0.5</td>
</tr>
<tr>
<td>Permission of GateWay Health Core Curriculum Coordinator (0)</td>
<td>0.3</td>
</tr>
<tr>
<td>HCC/RES109 CPR for Health Care Provider (0.5) OR</td>
<td>0.5</td>
</tr>
<tr>
<td>SGT260+ Surgical Procedures III ..............................................</td>
<td>2</td>
</tr>
<tr>
<td>SGT275+ Certification Examinations Preparation ................................</td>
<td>2</td>
</tr>
</tbody>
</table>

**Option II: (Credits: 39-46.5)**

Option II is for students who have a Certified Registered Central Service Technician (CRCST) certification through the International Association of Healthcare Central Service Material Management (IAHCSMM).

Students who have been admitted into Option II are required to take Credit by Evaluation for five (5) credits through the Program Director in lieu of enrolling in HCS/SGT100. (5)

HCC1130 or HCC130AA-AF and HCC145 or HCC146 may be waived by GateWay Health Core Curriculum Coordinator (602-286-8509) based on relevant industry experience or equivalent or course education.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCC130 Fundamentals in Health Care Delivery (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>HCC130AA Health Care Today (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AB Workplace Behaviors in Health Care (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AC Personal Wellness and Safety (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AD Communication and Teamwork in Health Care Organizations (0.5)</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AE Legal Issues in Health Care (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AF Decision Making in the Health Care Setting (0.5) OR</td>
<td>0.5</td>
</tr>
<tr>
<td>Permission of GateWay Health Core Curriculum Coordinator (0)</td>
<td>0.3</td>
</tr>
<tr>
<td>HCC/RES109 CPR for Health Care Provider (0.5) OR</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC141 Medical Terminology for Health Care Professionals (3) OR</td>
<td>3</td>
</tr>
<tr>
<td>HCC146 Common Medical Terminology for Health Care Professionals (2) OR</td>
<td>2</td>
</tr>
<tr>
<td>Permission of GateWay Health Core Curriculum Coordinator (0)</td>
<td>0.3</td>
</tr>
<tr>
<td>HCS/SGT101+ Medical Terminology for Surgical Services ...................</td>
<td>1</td>
</tr>
<tr>
<td>HCS/SGT102+ Basic Surgical Instrumentation for Surgical Services ....</td>
<td>2</td>
</tr>
<tr>
<td>HCS/SGT152+ Advanced Surgical Instruments for Surgical Services ......</td>
<td>2</td>
</tr>
<tr>
<td>RDG100AB Successful College Reading - Notetaking and Studying for Success (1) OR</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGT135+ Instrument Handling I ..................................................</td>
<td>1</td>
</tr>
<tr>
<td>SGT155+ Instrument Handling II ..................................................</td>
<td>1</td>
</tr>
<tr>
<td>SGT165+ Hospital Central Service Practicum For Surgical Technology ......</td>
<td>1</td>
</tr>
<tr>
<td>SGT165+ Surgical Procedures ....................................................</td>
<td>4</td>
</tr>
<tr>
<td>SGT180+ Pharmacology for Surgical Technology I ................................</td>
<td>1</td>
</tr>
<tr>
<td>SGT200+ Operating Room Practicum I ............................................</td>
<td>1</td>
</tr>
<tr>
<td>SGT205+ Operating Room Practicum II ...........................................</td>
<td>2</td>
</tr>
<tr>
<td>SGT210+ Operating Room Practicum III ..........................................</td>
<td>2</td>
</tr>
<tr>
<td>SGT215+ Operating Room Practicum IV ............................................</td>
<td>3</td>
</tr>
<tr>
<td>SGT220+ Operating Room Practicum V ............................................</td>
<td>3</td>
</tr>
<tr>
<td>SGT225+ Certification Examinations Preparation ................................</td>
<td>2</td>
</tr>
</tbody>
</table>

**Restricted Electives**

Restricted elective course below is optional. Students may select from zero (0) to seven (7) credits from course below if they desire to sit for the exam for Certified Registered Central Service Technician (CRCST) certification from the International Association of Healthcare Central Service Material Management (IAHCSMM).

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGT260+ Surgical Procedures III ..............................................</td>
<td>2</td>
</tr>
<tr>
<td>SGT275+ Certification Examinations Preparation ................................</td>
<td>2</td>
</tr>
</tbody>
</table>

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
Surgical Technology
Certificate of Completion in Surgical Technology
(49-73.5 credits; code 5673)

To qualify, students must earn a grade of C or better in all courses within the program.

Program Director: Susan Tome

The Certificate of Completion (CCL) in Surgical Technology program is designed for students with an interest in working in the surgical setting and caring for patients that are undergoing a surgical procedure. Students will apply manual dexterity and knowledge of surgical technology under the direction of a surgeon and in conjunction with the surgical team. At the completion of the program, graduates may seek employment in a hospital, surgical center, other outpatient settings, or surgical equipment industry and veterinary services. In addition, the CCL includes common core classes with the Hospital Central Services certificate program. Surgical Technology students have the option to complete the 480-hour Hospital Central Service Technology practicum to be eligible to sit for the Certified Registered Central Service Technician (CR CST) certification examination from International Association of Healthcare Central Service Material Management (IAHCSMM).

Program Notes:
Students must earn a grade of C or better for all courses required within the program.
+ indicates course has prerequisite and/or corequisites.
++ indicates any suffixed courses.

Admission Criteria:
1. Formal application and admission to the program.
2. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
3. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
4. Inability to comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

Program Prerequisites

There are two options available to students to enter the surgical technology program after completing the program prerequisite courses.

Option I: (Credits: 39-46.5)
Option I is for students who do NOT have a Certified Registered Central Service Technician (CR CST) certification from the International Association of Healthcare Central Service Material Management (IAHCSMM).

HCC130 or HCC130AA-AF and HCC145 or HCC146 may be waived by GateWay Health Core Curriculum Coordinator (602-286-8509) based on relevant industry experience or equivalent or course education.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCS/SGT100+ Fundamentals of Surgical Services</td>
<td>5</td>
</tr>
<tr>
<td>HCS/SGT101+ Medical Terminology for Surgical Services</td>
<td>1</td>
</tr>
<tr>
<td>HCS/SGT102+ Basic Surgical Instrumentation for Surgical Services</td>
<td>2</td>
</tr>
</tbody>
</table>

Certificate & Degree Programs 2019-2020
**Certificate & Degree Programs 2019-2020**

**General Education Requirements** ........................................................................................................... 17-23

**Required Courses** ........................................................................................................................................ 39-46.5

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>ENG101+</td>
<td>First Year Composition (3) OR</td>
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</tr>
<tr>
<td>ENG107+</td>
<td>First Year Composition for ESL (3) AND</td>
<td></td>
</tr>
<tr>
<td>ENG102+</td>
<td>First Year Composition (3) OR</td>
<td></td>
</tr>
<tr>
<td>ENG108+</td>
<td>First Year Composition for ESL (3)</td>
<td></td>
</tr>
</tbody>
</table>

Any approved general education course from the Oral Communication area except COM225 Public Speaking............................................. 3

**Program Prerequisites** ................................................................................................................................ 10-20

**Certificate of Completion in Surgical Technology**

**Program Notes:**

Students must earn a grade of C or better for all courses required within the program.

Admission Criteria:
1. Formal application and admission to the program.
2. Background Check Requirements: Admission to an Allied Health program requires that students be in compliance with the Maricopa County Community College District Background Check standards. Upon conditional program enrollment, the student must comply with all requirements of the MCCCD clinical health and safety policy.
3. Clinical Health and Safety requirements must be met. Upon conditional program enrollment, the student must comply with Background Check requirements and/or Clinical Health and Safety requirements at the start of classes may result in cancellation of enrollment.

**Program Prerequisites**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO160</td>
<td>Introduction to Human Anatomy and Physiology (4) OR</td>
</tr>
<tr>
<td>BIO201+</td>
<td>Human Anatomy and Physiology (4) AND</td>
</tr>
<tr>
<td>BIO202+</td>
<td>Human Anatomy and Physiology II (4)</td>
</tr>
</tbody>
</table>

Students selecting BIO201 and BIO202 must complete the prerequisite courses BIO156 or BIO181.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC101</td>
<td>Introduction to Sociology (3) OR</td>
</tr>
<tr>
<td>PSI101</td>
<td>Introduction to Psychology (3)</td>
</tr>
</tbody>
</table>

**Division:** Health Sciences

**Program Director:** Susan Tome

The Certificate of Completion (CCL) in Surgical Technology program is designed for students with an interest in working in the surgical setting and caring for patients that are undergoing a surgical procedure. Students will apply manual dexterity and knowledge of surgical technology under the direction of a surgeon and in conjunction with the surgical team. At the completion of the program, graduates may seek employment in a hospital, surgical center, other outpatient settings, or surgical equipment industry and veterinary services. In addition, the CCL includes common core classes with the Hospital Central Service certificate program. Surgical Technology students have the option to complete the 480-hour Hospital Central Service Technology practicum to be eligible to sit for the Certified Registered Central Service Technician (CRCST) certification examination from International Association of Healthcare Central Service Material Management (IAHCSMM).

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCC130</td>
<td>Fundamentals in Health Care Delivery (3) OR</td>
</tr>
<tr>
<td>HCC130AA</td>
<td>Health Care Today (0.5) AND</td>
</tr>
<tr>
<td>HCC130AB</td>
<td>Workplace Behaviors in Health Care (0.5) AND</td>
</tr>
<tr>
<td>HCC130AC</td>
<td>Personal Wellness and Safety (0.5) AND</td>
</tr>
<tr>
<td>HCC130AD</td>
<td>Communication and Teamwork in Health Care Organizations (0.5) AND</td>
</tr>
<tr>
<td>HCC130AE</td>
<td>Legal Issues in Health Care (0.5) AND</td>
</tr>
<tr>
<td>HCC130AF</td>
<td>Decision Making in the Health Care Setting (0.5) OR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCC/RES109</td>
<td>CPR for Health Care Provider (0.5) OR</td>
</tr>
<tr>
<td>HCC145</td>
<td>Medical Terminology for Health Care Professionals (3) OR</td>
</tr>
<tr>
<td>HCC146</td>
<td>Common Medical Terminology for Health Care Professionals (2) OR</td>
</tr>
</tbody>
</table>

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCS/GST100+</td>
<td>Fundamentals of Surgical Services</td>
</tr>
<tr>
<td>HCS/GST101+</td>
<td>Medical Terminology for Surgical Services</td>
</tr>
<tr>
<td>HCS/GST102+</td>
<td>Basic Surgical Instrumentation for Surgical Services</td>
</tr>
</tbody>
</table>

262

263

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HCC130</td>
<td>Fundamentals in Health Care Delivery (3) OR</td>
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<tr>
<td>HCC130AA</td>
<td>Health Care Today (0.5) AND</td>
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</tr>
<tr>
<td>HCC130AB</td>
<td>Workplace Behaviors in Health Care (0.5) AND</td>
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<tr>
<td>HCC130AC</td>
<td>Personal Wellness and Safety (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AD</td>
<td>Communication and Teamwork in Health Care Organizations (0.5) AND</td>
<td></td>
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<td>HCC130AE</td>
<td>Legal Issues in Health Care (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AF</td>
<td>Decision Making in the Health Care Setting (0.5) OR</td>
<td></td>
</tr>
<tr>
<td>HCC/RES109</td>
<td>CPR for Health Care Provider (0.5) OR</td>
<td></td>
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<tr>
<td>HCC15</td>
<td>Medical Terminology for Health Care Professionals (3) OR</td>
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</tr>
<tr>
<td>HCC146</td>
<td>Common Medical Terminology for Health Care Professionals (2) OR</td>
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<tr>
<td>HCS/SGT101+</td>
<td>Medical Terminology for Surgical Services</td>
<td></td>
</tr>
<tr>
<td>HCS/SGT102+</td>
<td>Basic Surgical Instrumentation for Surgical Services</td>
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<tr>
<td>HCS/SGT152+</td>
<td>Advanced Surgical Instruments for Surgical Services</td>
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<tr>
<td>RDG100AB</td>
<td>Successful College Reading - Notetaking and Studying for Success (1) OR</td>
<td></td>
</tr>
<tr>
<td>SGT135+</td>
<td>Instrument Handling I</td>
<td></td>
</tr>
<tr>
<td>SGT155+</td>
<td>Instrument Handling II</td>
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<tr>
<td>SGT156+</td>
<td>Hospital Central Service Practicum For Surgical Technology</td>
<td></td>
</tr>
<tr>
<td>SGT165+</td>
<td>Surgical Procedures I</td>
<td></td>
</tr>
<tr>
<td>SGT180+</td>
<td>Pharmacology for Surgical Technology I</td>
<td></td>
</tr>
<tr>
<td>SGT185+</td>
<td>Operating Room Practicum I</td>
<td></td>
</tr>
<tr>
<td>SGT200+</td>
<td>Operating Room Practicum IV</td>
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<tr>
<td>SGT205+</td>
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<td></td>
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<tr>
<td>SGT210+</td>
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<tr>
<td>SGT215+</td>
<td>Pharmacology for Surgical Technology II</td>
<td></td>
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<tr>
<td>SGT220+</td>
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<td>Operating Room Practicum IV</td>
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<td>SGT227+</td>
<td>Operating Room Practicum V</td>
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<tr>
<td>SGT250+</td>
<td>Certification Examinations Preparation</td>
<td></td>
</tr>
<tr>
<td>HCS/SGT152+</td>
<td>Advanced Surgical Instruments for Surgical Services</td>
<td></td>
</tr>
<tr>
<td>HCC130</td>
<td>Fundamentals in Health Care Delivery (3) OR</td>
<td></td>
</tr>
<tr>
<td>HCC130AA</td>
<td>Health Care Today (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AB</td>
<td>Workplace Behaviors in Health Care (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AC</td>
<td>Personal Wellness and Safety (0.5) AND</td>
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<td>HCC130AD</td>
<td>Communication and Teamwork in Health Care Organizations (0.5) AND</td>
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<td>HCC130AE</td>
<td>Legal Issues in Health Care (0.5) AND</td>
<td></td>
</tr>
<tr>
<td>HCC130AF</td>
<td>Decision Making in the Health Care Setting (0.5) OR</td>
<td></td>
</tr>
<tr>
<td>HCC/RES109</td>
<td>CPR for Health Care Provider (0.5) OR</td>
<td></td>
</tr>
<tr>
<td>HCC15</td>
<td>Medical Terminology for Health Care Professionals (3) OR</td>
<td></td>
</tr>
<tr>
<td>HCC146</td>
<td>Common Medical Terminology for Health Care Professionals (2) OR</td>
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<tr>
<td>HCS/SGT101+</td>
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</tr>
<tr>
<td>HCS/SGT102+</td>
<td>Basic Surgical Instrumentation for Surgical Services</td>
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<td>HCS/SGT152+</td>
<td>Advanced Surgical Instruments for Surgical Services</td>
<td></td>
</tr>
<tr>
<td>RDG100AB</td>
<td>Successful College Reading - Notetaking and Studying for Success (1) OR</td>
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</tr>
<tr>
<td>SGT135+</td>
<td>Instrument Handling I</td>
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</tr>
</tbody>
</table>

**Option II:** (Credits 39-46.5)

Option II is for students who have a Certified Registered Central Service Technician (CRCST) certification through the International Association of Healthcare Central Service Material Management (IAHCSMM).

Students who have been admitted into Option II are required to take Credit by Evaluation for five (5) credits through the Program Director in lieu of enrolling in HCS/SGT100. (5)

HCC130 or HCC130AA-AF and HCC145 or HCC146 may be waived by GateWay Health Core Curriculum Coordinator (602-286-8509) based on relevant industry experience or equivalent or course education.

HCS154+ Hospital Central Service Practicum (7)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HCS/SGT152+</td>
<td>Advanced Surgical Instruments for Surgical Services</td>
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</tr>
<tr>
<td>RDG100AB</td>
<td>Successful College Reading - Notetaking and Studying for Success (1) OR</td>
<td>1</td>
</tr>
<tr>
<td>SGT135+</td>
<td>Instrument Handling I</td>
<td>1</td>
</tr>
<tr>
<td>SGT155+</td>
<td>Instrument Handling II</td>
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<tr>
<td>SGT165+</td>
<td>Hospital Central Service Practicum For Surgical Technology</td>
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<tr>
<td>SGT16+</td>
<td>Surgical Procedures I</td>
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<td>SGT180+</td>
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<td>SGT205+</td>
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<td>2</td>
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<tr>
<td>SGT210+</td>
<td>Surgical Procedures II</td>
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<tr>
<td>SGT215+</td>
<td>Pharmacology for Surgical Technology II</td>
<td>1</td>
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<tr>
<td>SGT220+</td>
<td>Operating Room Practicum III</td>
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<tr>
<td>SGT275+</td>
<td>Certification Examinations Preparation</td>
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<tr>
<td>SGT260+</td>
<td>Surgical Procedures III</td>
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<tr>
<td>SGT265+</td>
<td>Certification Examinations Preparation</td>
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<td>HCS/SGT100+</td>
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<tr>
<td>RDG100AB</td>
<td>Successful College Reading - Notetaking and Studying for Success (1) OR</td>
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<tr>
<td>SGT135+</td>
<td>Instrument Handling I</td>
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</tr>
<tr>
<td>SGT155+</td>
<td>Instrument Handling II</td>
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</tr>
<tr>
<td>SGT165+</td>
<td>Hospital Central Service Practicum For Surgical Technology</td>
<td>1</td>
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<tr>
<td>SGT16+</td>
<td>Surgical Procedures I</td>
<td>1</td>
</tr>
<tr>
<td>SGT180+</td>
<td>Pharmacology for Surgical Technology I</td>
<td>1</td>
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<tr>
<td>SGT205+</td>
<td>Operating Room Practicum II</td>
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<td>SGT210+</td>
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<td>SGT227+</td>
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<tr>
<td>HCS154+</td>
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</table>

Option II: (Credits 39-46.5)

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HCC130</td>
<td>Fundamentals in Health Care Delivery (3) OR</td>
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</tr>
<tr>
<td>HCC130AA</td>
<td>Health Care Today (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AB</td>
<td>Workplace Behaviors in Health Care (0.5) AND</td>
<td>0.5</td>
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<tr>
<td>HCC130AC</td>
<td>Personal Wellness and Safety (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AD</td>
<td>Communication and Teamwork in Health Care Organizations (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AE</td>
<td>Legal Issues in Health Care (0.5) AND</td>
<td>0.5</td>
</tr>
<tr>
<td>HCC130AF</td>
<td>Decision Making in the Health Care Setting (0.5) OR</td>
<td>0.5</td>
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<tr>
<td>HCC/RES109</td>
<td>CPR for Health Care Provider (0.5) OR</td>
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<td>3</td>
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<tr>
<td>HCC146</td>
<td>Common Medical Terminology for Health Care Professionals (2) OR</td>
<td>2</td>
</tr>
<tr>
<td>HCC165+</td>
<td>Medical Terminology for Surgical Services</td>
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<tr>
<td>HCS/SGT101+</td>
<td>Basic Surgical Instrumentation for Surgical Services</td>
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<tr>
<td>HCS/SGT152+</td>
<td>Advanced Surgical Instruments for Surgical Services</td>
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</tr>
</tbody>
</table>

Restricted Electives ........................................................................................................... 0-7

Restricted elective course below is optional. Students may select from zero (0) to seven (7) credits from course below if they desire to sit for the exam for Certified Registered Central Service Technician (CRCST) certification from the International Association of Healthcare Central Service Material Management (IAHCSMM).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>SGT155+</td>
<td>Instrument Handling II</td>
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<tr>
<td>SGT165+</td>
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<td>SGT16+</td>
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<td>SGT180+</td>
<td>Pharmacology for Surgical Technology I</td>
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<td>SGT200+</td>
<td>Operating Room Practicum I</td>
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<tr>
<td>SGT205+</td>
<td>Operating Room Practicum II</td>
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<td>SGT210+</td>
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<td>SGT215+</td>
<td>Pharmacology for Surgical Technology II</td>
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<td>SGT225+</td>
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<td>3</td>
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<tr>
<td>SGT227+</td>
<td>Operating Room Practicum V</td>
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</tr>
<tr>
<td>SGT260+</td>
<td>Surgical Procedures III</td>
<td>2</td>
</tr>
<tr>
<td>SGT275+</td>
<td>Certification Examinations Preparation</td>
<td>2</td>
</tr>
</tbody>
</table>

HCS154+    | Hospital Central Service Practicum                                            | 7       |

* Indicates course has prerequisites and/or co-requisites.
** Indicates any module suffixed courses.
FIELD OF INTEREST: SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Arts Degree (AA) is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors in the Liberal Arts or programs of study other than business or science.

- Associate in Science Degree (AS) is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors with more stringent mathematics and mathematics-based science requirements.

Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

TRANSFER PATHWAY PROGRAMS

MCCCD Transfer Pathway Programs were created to allow Maricopa Community College students a smooth transition into an in-state college such as ASU, NAU, or UA.

(Please click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

ASTRONOMY (AS)

BIOLOGICAL SCIENCES (AS)

CHEMISTRY (AS)

EXERCISE SCIENCE: PRE-PHYSICAL THERAPY (AA)

GEOGRAPHY (AA)

GEOGRAPHY- METEOROLOGY (AS)

PHYSICS (AS)

SUSTAINABILITY (AA)

FIELD OF INTEREST: VISUAL AND PERFORMING ARTS

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Arts, Fine Arts Degree (AAFA) provides the first two years of a four-year curriculum for students who wish to specialize in fine arts. The degree offers an emphasis in creative problem-solving that is required in most career fields.

Note: it is strongly recommended that students meet with an academic advisor to determine the correct coursework to take based on intended major and transfer institution of choice.

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FINE ARTS (AAFA)
FIELD OF INTEREST: SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

- Associate in Arts Degree (AA) is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors in the Liberal Arts or programs of study other than business or science.

- Associate in Science Degree (AS) is designed for students planning to transfer to four-year colleges and universities. In general, the components of the degree meet requirements for majors with more stringent mathematics and mathematics-based science requirements.

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(Please click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

ASTRONOMY (AS)
BIOLOGICAL SCIENCES (AS)
CHEMISTRY (AS)
EXERCISE SCIENCE: PRE-PHYSICAL THERAPY (AA)
GEOGRAPHY (AA)
GEOGRAPHY- METEOROLOGY (AS)
PHYSICS (AS)
SUSTAINABILITY (AA)

FIELD OF INTEREST: VISUAL AND PERFORMING ARTS

CREDIT HOUR PROGRAMS are both theoretical and application in nature. Degrees take approximately two years to complete (based on full-time status); while certificates take less than two years to complete.

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(Please click program title for detailed information from our Center for Curriculum and Transfer Articulation.)

FINE ARTS (AAFA)
(AAA) ADVANCING ACADEMIC ACHIEVEMENT
AAA150 Lecture 3 Credits 3 Periods
Strategies for College Success
Focus on increasing student success through college orientation and personal growth, study skills development, and educational and career planning. Prerequisites: None. Cross-References: CPD150.

(ABC) ASSOCIATED BUILDERS & CONTRACTORS
ABC120 Lec + Lab 1.5 Credits 1.5 Periods
Basic Calculations for Construction
Addition, subtraction, multiplication and division of whole, decimal, fraction and metric numbers. Percentage and fraction conversions. Metric units of length, weight, volume and temperature. Metric system as it relates to the construction trade. Basic algebra and geometry operations and equations. Area and volume calculations of shapes. Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator. Cross-References: MEC/PNT120.

(ABO) AUTO BODY
ABO103 164 Clock Hours
Introduction to Auto Body Repair
Gain basic auto body repair skills in dent removal, body filler application and sanding, plastic repair, metal inert gas (MIG) welding, resistance spot welding, plasma cutting, estimate reading, air conditioning service, coolant recovery and vehicle inspection tear down. Prerequisites: None.

ABO104 164 Clock Hours
Introduction to Automotive Refinishing
Acquire basic auto body refinish skills with dual and single stage paints, spray equipment setup, vehicle prep and tape, paint correction with cut and buffing, scratch repair, and proper blending techniques, as well as basic knowledge of toners, and paint mixing. Prerequisites: None.

ABO203 200 Clock Hours
Advanced Automotive Body Repair
Advance skills to a higher level of competency and speed along with advancing knowledge in the areas of non-structural repair. Prerequisites: None.

ABO204 200 Clock Hours
Advanced Refinishing Fundamentals
Advance skills to a higher level of competency and speed along with advancing knowledge in the area of automotive refinishing. Prerequisites: None.
(AAA) ADVANCE ACADEMIC ACHIEVEMENT

AAA150 Lecture 3 Credits 3 Periods
Strategies for College Success
Focus on increasing student success through college orientation and personal growth, study skills development, and educational and career planning. Prerequisites: None. Cross-References: CPD150.

(ABC) ASSOCIATED BUILDERS & CONTRACTORS

ABC120 Lec + Lab 1.5 Credits 1.5 Periods
Basic Calculations for Construction
Addition, subtraction, multiplication and division of whole, decimal, fraction and metric numbers. Percentage and fraction conversions. Metric units of length, weight, volume and temperature. Metric system as it relates to the construction trade. Basic algebra and geometry operations and equations. Area and volume calculations of shapes. Prerequisites: Registered apprentice status or permission of the Apprenticeship Coordinator. Cross-References: MEC/PNT120.

(ABO) AUTO BODY

ABO103 164 Clock Hours
Introduction to Auto Body Repair
Gain basic auto body repair skills in dent removal, body filler application and sanding, plastic repair, metal inert gas (MIG) welding, resistance spot welding, plasma cutting, estimate reading, air conditioning service, coolant recovery and vehicle inspection tear down. Prerequisites: None.

ABO104 164 Clock Hours
Introduction to Automotive Refinishing
Acquire basic auto body refinish skills with dual and single stage paints, spray equipment setup, vehicle prep and tape, paint correction with cut and buffing, scratch repair, and proper blending techniques, as well as basic knowledge of toners, and paint mixing. Prerequisites: None.

ABO203 200 Clock Hours
Advanced Automotive Body Repair
Advance skills to a higher level of competency and speed along with advancing knowledge in the areas of non-structural repair. Prerequisites: None.

ABO204 200 Clock Hours
Advanced Refinishing Fundamentals
Advance skills to a higher level of competency and speed along with advancing knowledge in the area of automotive refinishing. Prerequisites: None.
# Course Listings 2019-2020

## (ACC) ACCOUNTING

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Type</th>
<th>Credits</th>
<th>Periods</th>
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<tbody>
<tr>
<td>ACC105</td>
<td>Lecture</td>
<td>3</td>
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</tr>
<tr>
<td>Payroll, Sales and Property Taxes</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Tax reporting for payroll, sales and personal property. Prerequisites: None.</td>
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<tr>
<td>ACC111</td>
<td>Lecture</td>
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<tr>
<td>Accounting Principles I</td>
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<tr>
<td>Fundamental theory of accounting principles and procedures. Prerequisites: None.</td>
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<tr>
<td>ACC112</td>
<td>Lecture</td>
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<tr>
<td>Accounting Principles II</td>
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<tr>
<td>Continuation of the fundamental theory of accounting principles and procedures, including interpretation of general purpose financial statements. Requisites: ACC111 with a grade of C or better or permission of Department or Division.</td>
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<tr>
<td>ACC115</td>
<td>Lec + Lab</td>
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<td>3</td>
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<tr>
<td>Computerized Accounting</td>
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<tr>
<td>Mastery of a microcomputer accounting system including the general ledger, accounts receivable, accounts payable and payroll. Prerequisites: A grade of C or better in ACC107 or ACC111 or ACC211 or ACC230, or permission of Instructor.</td>
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<tr>
<td>ACC121</td>
<td>Lec + Lab</td>
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<tr>
<td>Income Tax Preparation</td>
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<tr>
<td>Preparation of and practical experience in preparing individual federal income tax returns using computer software. Prerequisites: None.</td>
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<tr>
<td>ACC212</td>
<td>Lecture</td>
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<tr>
<td>Managerial Accounting</td>
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<tr>
<td>Development and analysis of accounting information for managerial planning and control. A grade of C or better in (ACC111 and ACC112) or ACC211 and (CIS105 or permission of Department or Division).</td>
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<tr>
<td>ACC230</td>
<td>Lecture</td>
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<tr>
<td>Uses of Accounting Information I</td>
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<td></td>
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<tr>
<td>Introduction to the uses of accounting information for internal and external purposes with emphasis on financial statement analysis. Prerequisites: A grade of C or better in (ACC111 or ACC211) or ([EENG101 or EENG107] and MAT151 and CRE101) or (appropriate test scores on the District English, Reading, and Math placement exams).</td>
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<tr>
<td>ACC240</td>
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<tr>
<td>Uses of Accounting Information II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction to the uses of accounting information for internal and external purposes with emphasis on analysis for use by management. Prerequisites: A grade of C or better in ACC230.</td>
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## (ARH) ART HUMANITIES

<table>
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<tr>
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<th>Type</th>
<th>Credits</th>
<th>Periods</th>
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<tr>
<td>ARH101</td>
<td>Lecture</td>
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<tr>
<td>Prehistoric through Gothic Art</td>
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<tr>
<td>SUN# ART1101</td>
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<td></td>
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</tr>
<tr>
<td>History of art from prehistoric through medieval period. Prerequisites: None.</td>
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</tr>
<tr>
<td>ARH102</td>
<td>Lecture</td>
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<tr>
<td>Renaissance through Contemporary Art</td>
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<tr>
<td>SUN# ART1102</td>
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<tr>
<td>History of art from around the world from the Renaissance through contemporary period. Prerequisites: None.</td>
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## (ART) ART

<table>
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<tr>
<th>Course Code</th>
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<th>Periods</th>
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<tbody>
<tr>
<td>ART111</td>
<td>Lec + Lab</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Drawing I</td>
<td></td>
<td></td>
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<tr>
<td>Fundamental principles of drawing. Emphasis on composition and facility in objective and expressive representation, using variety of drawing media. Prerequisites: None.</td>
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<tr>
<td>ART112</td>
<td>Lec + Lab</td>
<td>3</td>
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</tr>
<tr>
<td>Two-Dimensional Design</td>
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<tr>
<td>SUN# ART 1112</td>
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<tr>
<td>Study of fundamental elements and principles of two-dimensional design. Requisites: None.</td>
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<tr>
<td>ART115</td>
<td>Lec + Lab</td>
<td>3</td>
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<tr>
<td>Three-Dimensional Design</td>
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<tr>
<td>SUN# ART1115</td>
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<tr>
<td>Fundamental principles of three-dimensional design. Prerequisites: None.</td>
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<tr>
<td>ART122</td>
<td>Lec + Lab</td>
<td>3</td>
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<tr>
<td>Drawing and Composition II</td>
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<tr>
<td>Emphasis on composition and exploration of drawing media. Prerequisites: A grade of C or better in ART111.</td>
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<tr>
<td>ART151</td>
<td>Lec + Lab</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Sculpture I</td>
<td></td>
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<tr>
<td>Exploration of sculptural form and expression in clay, plaster, stone, wood and metal. Prerequisites: None.</td>
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<tr>
<td>ART152</td>
<td>Lec + Lab</td>
<td>3</td>
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<tr>
<td>Sculpture II</td>
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<tr>
<td>Emphasis on control of sculptural media. Prerequisites: A grade of C or better in ART151.</td>
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<tr>
<td>ART161</td>
<td>Lec + Lab</td>
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<td>6</td>
</tr>
<tr>
<td>Ceramics I</td>
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<tr>
<td>Introduction to ceramic materials and techniques of hand construction, decorating, glazing and throwing on potter's wheel. Prerequisites: None.</td>
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<tr>
<td>ART162</td>
<td>Lec + Lab</td>
<td>3</td>
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<tr>
<td>Ceramics II</td>
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<tr>
<td>Major emphasis on wheel throwing, glaze making and decorating techniques. Prerequisites: A grade of C or better in ART161.</td>
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</tbody>
</table>
(ACC) ACCOUNTING

ACC105 Lecture 3 Credits 3 Periods
Payroll, Sales and Property Taxes
Tax reporting for payroll, sales and personal property. Prerequisites: None.

ACC111 Lecture 3 Credits 3 Periods
Accounting Principles I
Fundamental theory of accounting principles and procedures. Prerequisites: None.

ACC112 Lecture 3 Credits 3 Periods
Accounting Principles II
Continuation of the fundamental theory of accounting principles and procedures, including interpretation of general purpose financial statements. Prerequisites: ACC111 with a grade of C or better or permission of Department or Division.

ACC115 Lec + Lab 2 Credits 3 Periods
Computerized Accounting
Mastery of a microcomputer accounting system including the general ledger, accounts receivable, accounts payable and payroll. Prerequisites: A grade of C or better in ACC107 or ACC111 or ACC211 or ACC230, or permission of Instructor.

ACC121 Lec + Lab 3 Credits 3 Periods
Income Tax Preparation
Preparation of and practical experience in preparing individual federal income tax returns using computer software. Prerequisites: None.

ACC212 Lecture 3 Credits 3 Periods
Managerial Accounting
SUN# ACC2202
Development and analysis of accounting information for managerial planning and control. A grade of C or better in (ACC111 and ACC112) or ACC211 and (CIS105 or permission of Department or Division).

ACC230 Lecture 3 Credits 3 Periods
Uses of Accounting Information I
Introduction to the uses of accounting information for internal and external purposes with emphasis on financial statement analysis. Prerequisites: A grade of C or better in (ACC111 or ACC211) or [IENG101 or IENG107] and MAT151 and CRE101 or appropriate test scores on the District English, Reading, and Math placement exams.

ACC240 Lecture 3 Credits 3 Periods
Uses of Accounting Information II
Introduction to the uses of accounting information for internal and external purposes with emphasis on analysis for use by management. Prerequisites: A grade of C or better in ACC230.

(AJ S) ADMINISTRATION OF JUSTICE STUDIES

AJS101 Lecture 3 Credits 3 Periods
Introduction to Criminal Justice
SUN# AJS1101
An introduction to crime and society's responses to it. Examines the nature and causes of crime, the criminal law, constitutional safeguards, and the organization and operation of the criminal justice system including the police, courts, jails, prisons, probation and parole departments, and community corrections agencies. Covers the history of the criminal justice system, terminology and career opportunities. Prerequisites: None.

(ARH) ART HUMANITIES

ARH101 Lecture 3 Credits 3 Periods
Prehistoric through Gothic Art
SUN# ART1101
History of art from prehistoric through medieval period. Prerequisites: None.

ARH102 Lecture 3 Credits 3 Periods
Renaissance through Contemporary Art
SUN# ART1102
History of art from around the world from the Renaissance through contemporary period. Prerequisites: None.

(ART) ART

ART111 Lec + Lab 3 Credits 6 Periods
Drawing I
SUN# ART111
Fundamental principles of drawing. Emphasis on composition and facility in objective and expressive representation, using variety of drawing media. Prerequisites: None.

ART112 Lec + Lab 3 Credits 6 Periods
Two-Dimensional Design
SUN# ART112
Study of fundamental elements and principles of two-dimensional design. Requisites: None.

ART115 Lec + Lab 3 Credits 6 Periods
Three-Dimensional Design
SUN# ART115
Fundamental principles of three-dimensional design. Prerequisites: None.

ART122 Lec + Lab 3 Credits 6 Periods
Drawing and Composition II
Emphasis on composition and exploration of drawing media. Prerequisites: A grade of C or better in ART111.

ART151 Lec + Lab 3 Credits 6 Periods
Sculpture I
Exploration of sculptural form and expression in clay, plaster, stone, wood and metal. Prerequisites: None.

ART152 Lec + Lab 3 Credits 6 Periods
Sculpture II
Emphasis on control of sculptural media. Prerequisites: A grade of C or better in ART151.

ART161 Lec + Lab 3 Credits 6 Periods
Ceramics I
Introduction to ceramic materials and techniques of hand construction, decorating, glazing and throwing on potters' wheel. Prerequisites: None.

ART162 Lec + Lab 3 Credits 6 Periods
Ceramics II
Major emphasis on wheel throwing, glaze making and decorating techniques. Prerequisites: A grade of C or better in ART161.
(ASE) AUTOMOTIVE SERVICE

ASE101 Lec + Lab 2 Credits 3 Periods
Introduction to Automotive
Introduction to the standards of the automotive industry. Includes an overview of the major automotive systems, safety practices, workplace habits, tools and equipment. Prerequisites: None.

ASE102 Lec + Lab 2 Credits 4 Periods
Automotive Express Service
Use of standard service publications; performance of commonly used service operations following published service procedures; emphasis on good attitude development and safety habits about automotive service. Prerequisites: None.

ASE111 Lec + Lab 2 Credits 4 Periods
Engine Diagnosis and Inspection
Diagnosis and inspection of automotive internal combustion engines. Prerequisites: None.

ASE113 Lec + Lab 4 Credits 8 Periods
Engine Repair
Diagnosis, disassembly, repair and reassembly of automotive internal combustion engines. Prerequisites: None.

ASE121 Lec + Lab 4 Credits 8 Periods
Automatic Transmission and Transaxle
Principles of automotive operation, servicing and repair procedures for automatic transmissions/transaxles; includes diagnostics and testing of mechanical, electrical, and hydraulic components. Prerequisites: None.

ASE131 Lec + Lab 4 Credits 8 Periods
Manual Drive Trains and Axles
Operation, diagnosis, service, and repair of the automotive powertrain. Includes manual transmissions/transaxles, clutches, drive axles, driveshafts, differentials, four-wheel drive, and all-wheel drive. Prerequisites: None.

ASE141 Lec + Lab 2 Credits 4 Periods
Steering, Suspension and Pre-Alignment
Principles and operation of automotive suspension and steering systems. Prerequisites: None.

ASE151 Lec + Lab 2 Credits 4 Periods
Introduction to Brake Systems
Fundamentals and operation of automotive braking systems. Includes training in service, testing, and repair of basic brake and brake-related components. Prerequisites: None.

ASE161 Lec + Lab 2 Credits 3 Periods
Basic Automotive Electrical/Electronics
Basic principles of automotive electricity and electrical systems. Prerequisites: None.

ASE162 Lec + Lab 2 Credits 3 Periods
Automotive Battery, Starting and Charging Systems
Principles of operation, testing and diagnosis of automotive battery, starting and charging systems. Prerequisites: A grade of C or better in ASE161, or permission of instructor.
Course Listings 2019-2020

(ASB) ANTHROPOLOGY

ASB211 Lecture 3 Credits 3 Periods
Women in Other Cultures
Cross-cultural analysis of the economic, social, political, and religious factors that affect women’s status in traditional and modern societies. Prerequisites: None.

ASB214 Lecture 3 Credits 3 Periods
Magic, Witchcraft and Healing: An Introduction to Comparative Religion
Origins, elements, and forms of religion; a comparative survey of religious beliefs, myths, rituals and symbolism including magic, witchcraft and healing as practiced in selected regions of the world, the place of religion in the total culture. Prerequisites: None.

ASB222 Lecture 3 Credits 3 Periods
Buried Cities and Lost Tribes: Old World
Introduction to archaeology through discoveries and the researchers who made them. Emphasis on methods of archaeological fieldwork and what these discoveries reveal about humanity, including the nature of archaeological inquiry, the development of human social groups, the changing role of religion in evolving societies, the origins of agriculture, the origins of settled life ways, the rise of cities and complex societies, political strife across different cultures and the forces which tend to fragment societies. Examples drawn from Africa, Asia, Europe, the Pacific Islands, and Australia. Prerequisites: None.

ASB223 Lecture 3 Credits 3 Periods
Buried Cities and Lost Tribes: New World
Introduction to archaeology through discoveries and the researchers who made them. Emphasis on methods of archaeological fieldwork and what these discoveries reveal about humanity, including the nature of archaeological inquiry, the development of human social groups, the changing role of religion in evolving societies, the origins of agriculture, the origins of settled life ways, the rise of cities and complex societies, political strife across different cultures and the forces which tend to fragment societies. Examples drawn from North America, Central America, and South America. Prerequisites: None.

ASB253 Lecture 3 Credits 3 Periods
Death and Dying Across Cultures
Responses to death and dying in cultures around the world. Explanations for particular cultural responses to death and dying. Examples drawn from ancient and contemporary cultures. Prerequisites: None.

(ASE) AUTOMOTIVE SERVICE

ASE101 Lec + Lab 2 Credits 3 Periods
Introduction to Automotive
Introduction to the standards of the automotive industry. Includes an overview of the major automotive systems, safety practices, workplace habits, tools and equipment. Prerequisites: None.

ASE102 Lec + Lab 2 Credits 4 Periods
Automotive Express Service
Use of standard service publications; performance of commonly used service operations following published service procedures; emphasis on good attitude development and safety habits about automotive service. Prerequisites: None.

ASE111 Lec + Lab 2 Credits 4 Periods
Engine Diagnosis and Inspection
Diagnosis and inspection of automotive internal combustion engines. Prerequisites: None.

ASE113 Lec + Lab 4 Credits 8 Periods
Engine Repair
Diagnosis, disassembly, repair and reassembly of automotive internal combustion engines. Prerequisites: None.

ASE121 Lec + Lab 4 Credits 8 Periods
Automatic Transmission and Transaxle
Principles of automotive operation, servicing and repair procedures for automatic transmissions/transaxles; includes diagnostics and testing of mechanical, electrical, and hydraulic components. Prerequisites: None.

ASE131 Lec + Lab 4 Credits 8 Periods
Manual Drive Trains and Axles
Operation, diagnosis, service, and repair of the automotive powertrain. Includes manual transmissions/transaxles, clutches, drive axles, driveshafts, differentials, four-wheel drive, and all-wheel drive. Prerequisites: None.

ASE141 Lec + Lab 2 Credits 4 Periods
Steering, Suspension and Pre-Alignment
Principles and operation of automotive suspension and steering systems. Prerequisites: None.

ASE151 Lec + Lab 2 Credits 4 Periods
Introduction to Brake Systems
Fundamentals and operation of automotive braking systems. Includes training in service, testing, and repair of basic brake and brake-related components. Prerequisites: None.

ASE161 Lec + Lab 2 Credits 3 Periods
Basic Automotive Electrical/Electronics
Basic principles of automotive electricity and electrical systems. Prerequisites: None.

ASE162 Lec + Lab 2 Credits 3 Periods
Automotive Battery, Starting and Charging Systems
Principles of operation, testing and diagnosis of automotive battery, starting and charging systems. Prerequisites: A grade of C or better in ASE161, or permission of Instructor.
### ASE171  Lec + Lab  3 Credits  7 Periods  
**Automotive Heating, Ventilation and Air Conditioning Systems**  
Theory and operation of automotive heating, ventilation and air conditioning systems. Includes training in diagnosis, service and repair of these systems. Prerequisites: None.

### ASE181  Lec + Lab  2 Credits  4 Periods  
**Introduction to Engine Performance**  
Introductory course in automotive engine performance. Introduces the construction and operating principles of automotive internal combustion engines, fuel systems, ignition systems, and the related lubrication and cooling systems. Prerequisites: None.

### ASE182  Lec + Lab  2 Credits  4 Periods  
**Fundamentals of Automotive Fuel/Air and Ignition Systems**  
Theory and fundamentals of automotive fuel/air delivery and ignition systems. Includes the proper diagnosis and repair of the fuel/air delivery and ignition systems. Prerequisites: A grade of C or better in ASE181, or permission of Instructor.

### ASE241  Lec + Lab  2 Credits  4 Periods  
**Advanced Steering, Suspension and Alignment**  
Advanced automotive principles of suspension and steering systems. Diagnosis, service and repair procedures, with emphasis on four-wheel alignment. Prerequisites: A grade of C or better in ASE141, or permission of Instructor.

### ASE251  Lec + Lab  2 Credits  4 Periods  
**Advanced Brake Systems**  
Operation, diagnosis, service and repair of advanced automotive brake systems. Prerequisites: A grade of C or better in ASE151, or permission of Instructor.

### ASE261  Lec + Lab  2 Credits  4 Periods  
**Automotive Electrical Diagnostics and Repair**  
Principles of automotive electrical diagnostics and repair. Prerequisites: A grade of C or better in ASE162, or permission of Instructor.

### ASE262  Lec + Lab  2 Credits  4 Periods  
**Automotive Electronic Control Systems**  
Principles and operation of automotive electronics and electronic control systems. Prerequisites: A grade of C or better in ASE261, or permission of Instructor.

### ASE263  Lec + Lab  2 Credits  4 Periods  
**Hybrid Vehicle Overview**  
Automotive hybrid vehicle design and operation. Safety practices as suggested by manufacturers for servicing hybrid vehicle. Prerequisites: A grade of C or better in ASE101.

### ASE281  Lec + Lab  2 Credits  4 Periods  
**Computerized Automotive Engine Control Systems**  
The theory of computerized engine control systems as they relate to engine performance and emissions control. Prerequisites: A grade of C or better in ASE182, or permission of Instructor.

### ASE282  Lec + Lab  2 Credits  4 Periods  
**Advanced Engine Performance Diagnosis**  
Diagnosis and repair of emission and engine control systems. Emphasizes the proper diagnosis, documentation, and repair of systems faults. Prerequisites: A grade of C or better in ASE261 and ASE281, or permission of Instructor.

### ASE290AA  Lec + Lab  1 Credit  1 Period  
**Automotive Service Internship**  
Automotive work experience in the automotive service industry. 80 hours of designated work per credit. Maximum of four (4) credits can be earned by taking any combination of ASE290AA and/or ASE290AB, and/or ASE290AC, this combination may include repeats of the same suffixed course(s). Prerequisites: Permission of Department or Division.

### ASE290AC  Lec + Lab  3 Credits  3 Periods  
**Automotive Service Internship**  
Automotive work experience in the automotive service industry. 80 hours of designated work per credit. Maximum of four (4) credits can be earned by taking any combination of ASE290AA and/or ASE290AB, and/or ASE290AC, this combination may include repeats of the same suffixed course(s). Prerequisites: Permission of Department or Division.

### ASE298AA Lab  1 Credit  1 Period  
**Special Projects**  
An organized and tailored activity around the interests and needs of the individual student. Allows the best aspects of independent study and individualized learning to be combined to maximize student development. Prerequisites: Permission of Program Director or Instructor.

### ASE298AC Lab  3 Credits  3 Periods  
**Special Projects**  
An organized and tailored activity around the interests and needs of the individual student. Allows the best aspects of independent study and individualized learning to be combined to maximize student development. Prerequisites: Permission of Program Director or Instructor.

### ASM ANTHROPOLOGY

#### ASM104  Lec + Lab  4 Credits  5 Periods  
**Bones, Stones, and Human Evolution**  
Study of human evolution and variation; including fossil hominids and their tools, primate anatomy and behavior, human genetics, and the environment and human biology. Prerequisites: None.

### (AUT) AUTOMOTIVE TECHNOLOGY

#### AUT103AA  Lec + Lab  6 Credits  10 Periods  
**Automotive Electrical Systems**  
Basic principles and fundamentals of automotive electricity and electrical systems. Training in diagnosis, service and reconditioning procedures of automotive starting, charging, ignition, and electrical circuits and components. Requisites: None.

#### AUT104AA  Lec + Lab  3 Credits  5 Periods  
**Automotive Fuel Systems**  
Theory and operation of fuel injection, engine control management, turbo charging and fuel systems, training in diagnosis, service and reconditioning procedures. Prerequisites: A grade of C or better in AUT103AA or AUT103AB or permission of Instructor.
<table>
<thead>
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<th>Course Code</th>
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<th>Periods</th>
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<tbody>
<tr>
<td>ASE171</td>
<td>Lec + Lab</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Automotive Heating, Ventilation and Air Conditioning Systems</td>
<td>Theory and operation of automotive heating, ventilation and air conditioning systems. Includes training in diagnosis, service and repair of these systems. Prerequisites: None.</td>
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<tr>
<td>ASE181</td>
<td>Lec + Lab</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Introduction to Engine Performance</td>
<td>Introductory course in automotive engine performance. Introduces the construction and operating principles of automotive internal combustion engines, fuel systems, ignition systems, and the related lubrication and cooling systems. Prerequisites: None.</td>
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<tr>
<td>ASE182</td>
<td>Lec + Lab</td>
<td>2</td>
<td>4</td>
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<tr>
<td>Fundamentals of Automotive Fuel/Air and Ignition Systems</td>
<td>Theory and fundamentals of automotive fuel/air delivery and ignition systems. Includes the proper diagnosis and repair of the fuel/air delivery and ignition systems. Prerequisites: A grade of C or better in ASE181, or permission of instructor.</td>
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<tr>
<td>ASE241</td>
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<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Advanced Steering, Suspension and Alignment</td>
<td>Advanced automotive principles of suspension and steering systems. Diagnosis, service and repair procedures, with emphasis on four-wheel alignment. Prerequisites: A grade of C or better in ASE141, or permission of instructor.</td>
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<td>ASE251</td>
<td>Lec + Lab</td>
<td>2</td>
<td>4</td>
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<tr>
<td>Advanced Brake Systems</td>
<td>Operation, diagnosis, service and repair of advanced automotive brake systems. Prerequisites: A grade of C or better in ASE151, or permission of instructor.</td>
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<tr>
<td>ASE261</td>
<td>Lec + Lab</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Automotive Electrical Diagnostics and Repair</td>
<td>Principles of automotive electrical diagnostics and repair. Prerequisites: A grade of C or better in ASE162, or permission of instructor.</td>
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<tr>
<td>ASE262</td>
<td>Lec + Lab</td>
<td>2</td>
<td>4</td>
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<tr>
<td>Automotive Electronic Control Systems</td>
<td>Principles and operation of automotive electronics and electronic control systems. Prerequisites: A grade of C or better in ASE261, or permission of instructor.</td>
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</tr>
<tr>
<td>ASE263</td>
<td>Lec + Lab</td>
<td>2</td>
<td>4</td>
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<tr>
<td>Hybrid Vehicle Overview</td>
<td>Automotive hybrid vehicle design and operation. Safety practices as suggested by manufacturers for servicing hybrid vehicle. Prerequisites: A grade of C or better in ASE101.</td>
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<tr>
<td>ASE281</td>
<td>Lec + Lab</td>
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<td>4</td>
</tr>
<tr>
<td>Computerized Automotive Engine Control Systems</td>
<td>The theory of computerized engine control systems as they relate to engine performance and emissions control. Prerequisites: A grade of C or better in ASE182, or permission of instructor.</td>
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<tr>
<td>ASE282</td>
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<tr>
<td>Advanced Engine Performance Diagnosis</td>
<td>Diagnosis and repair of emission and engine control systems. Emphasizes the proper diagnosis, documentation, and repair of systems faults. Prerequisites: A grade of C or better in ASE261 and ASE281, or permission of Instructor.</td>
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<tr>
<td>ASE290AA</td>
<td>Lec + Lab</td>
<td>1</td>
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</tr>
<tr>
<td>Automotive Service Internship</td>
<td>Automotive work experience in the automotive service industry. 80 hours of designated work per credit. Maximum of four (4) credits can be earned by taking any combination of ASE290AA and/or ASE290AB, and/or ASE290AC; this combination may include repeats of the same suffixed course(s). Prerequisites: Permission of Department or Division.</td>
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<tr>
<td>ASE290AC</td>
<td>Lec + Lab</td>
<td>3</td>
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<tr>
<td>Automotive Service Internship</td>
<td>Automotive work experience in the automotive service industry. 80 hours of designated work per credit. Maximum of four (4) credits can be earned by taking any combination of ASE290AA and/or ASE290AB, and/or ASE290AC; this combination may include repeats of the same suffixed course(s). Prerequisites: Permission of Department or Division.</td>
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<tr>
<td>ASE298AA</td>
<td>Lab</td>
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<tr>
<td>Special Projects</td>
<td>An organized and tailored activity around the interests and needs of the individual student. Allows the best aspects of independent study and individualized learning to be combined to maximize student development. Prerequisites: Permission of Program Director or Instructor.</td>
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<td>ASE298AC</td>
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<tbody>
<tr>
<td>ASM104</td>
<td>Lec + Lab</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Bones, Stones, and Human Evolution</td>
<td>Study of human evolution and variation; including fossil hominids and their tools, primate anatomy and behavior, human genetics, and the environment and human biology. Prerequisites: None.</td>
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<tr>
<td>AUT103AA</td>
<td>Lec + Lab</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Automotive Electrical Systems</td>
<td>Basic principles and fundamentals of automotive electricity and electrical systems. Training in diagnosis, service and reconditioning procedures of automotive starting, charging, ignition, and electrical circuits and components. Prerequisites: None.</td>
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<tr>
<td>AUT104AA</td>
<td>Lec + Lab</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Automotive Fuel Systems</td>
<td>Theory and operation of fuel injection, engine control management, turbo charging and fuel systems, training in diagnosis, service and reconditioning procedures. Prerequisites: A grade of C or better in AUT103AA or AUT103AB or permission of Instructor.</td>
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</tbody>
</table>
AUT105AA  Lec + Lab  3 Credits  5 Periods  
**Engine Performance and Diagnosis**
The theory and fundamentals of automotive engine management troubleshooting and oscilloscope testing as it pertains to diagnosis and tune-up of the modern day automobile. Emphasis on interpretation of oscilloscope patterns and Scantool Data as they relate to engine performance. Prerequisites: A grade of C or better in (AUT103AA and AUT104AA) or permission of Instructor.

AUT106AC  Lec + Lab  3 Credits  5 Periods  
**Engine Overhaul and Reconditioning: Heads and Valves**
Diagnostic and service skills essential to service and repair of the cylinder head and valve train of contemporary automotive engines. Includes valve, guide, and seat reconditioning and service. Does not include block and crankshaft service. Prerequisites: A grade of C or better in AUT103AA or permission of Instructor.

AUT106AD  Lec + Lab  3 Credits  5 Periods  
**Engine Overhaul and Reconditioning Block and Crankshaft**
Diagnostic and service skills related to cylinder block, piston, rod and crankshaft service. Includes honing, boring and crankshaft reconditioning as well as piston and ring service. Does not include cylinder head and valve work. Prerequisites: None.

AUT107AD  Lec + Lab  4 Credits  7 Periods  
**Automotive Air Conditioning**
The theory and principles of refrigeration and air conditioning. Training in diagnosis, servicing, and reconditioning procedures of automotive air conditioning systems including electronic system controls. Prerequisites: A grade of C or better in AUT103AA.

AUT108AB  Lec + Lab  4 Credits  7 Periods  
**Front-End Suspension, Steering, and Alignment**
The fundamentals and principles of suspension and steering systems. Diagnosis, service, and reconditioning procedures. Laboratory emphasis on front-end service and alignment. Prerequisites: None.

AUT109AC  Lec + Lab  4 Credits  7 Periods  
**Automotive Brake Systems**
Designed for beginning automotive students. Fundamentals of drum, disc, and ABS brakes. Includes training in diagnosis, testing, service, and repair. Prerequisites: None.

AUT110AC  Lec + Lab  4 Credits  7 Periods  
**Automotive Power Trains**
Designed for beginning automotive students. The principle of electricity; the mathematical computations involved with Ohm’s Law; the use of meters; electrical schematics; the theory of electrical components as they relate to automobiles; the diagnosis, testing, service and repair of batteries, starting systems and charging systems, lighting systems and instrumentation. Prerequisites: None.

AUT123  Lec 6 Credits  Lec 4 Periods / Lab 0 Credits  Lab 6 Periods  
**Automatic Transmissions**
Theory of operation and servicing procedures for current automatic transmissions. Prerequisites: A grade of C or better in (AUT103AA and AUT104AA) or permission of Instructor.

AUT123AA  Lec + Lab  4 Credits  8 Periods  
**Automatic Transmissions**
Theory of operation and servicing procedures for current domestic automatic transmissions; includes diagnostics and testing of mechanical, electrical, and hydraulic components. Prerequisites: None.
AUT105AA  Lec + Lab  3 Credits  5 Periods
**Engine Performance and Diagnosis**
The theory and fundamentals of automotive engine management troubleshooting and oscilloscope testing as it pertains to diagnosis and tune-up of the modern day automobile. Emphasis on interpretation of oscilloscope patterns and Scantool Data as they relate to engine performance. Prerequisites: A grade of C or better in (AUT103AA and AUT104AA) or permission of Instructor.

AUT106AC  Lec + Lab  3 Credits  5 Periods
**Engine Overhaul and Reconditioning: Heads and Valves**
Diagnostic and service skills essential to service and repair of the cylinder head and valve train of contemporary automotive engines. Includes valve, guide, and seat reconditioning and service. Does not include block and crankshaft service. Prerequisites: A grade of C or better in AUT103AA or permission of Instructor.

AUT106AD  Lec + Lab  3 Credits  5 Periods
**Engine Overhaul and Reconditioning Block and Crankshaft**
Diagnostic and service skills related to cylinder block, piston, rod and crankshaft service. Includes honing, boring and crankshaft reconditioning as well as piston and ring service. Does not include cylinder head and valve work. Prerequisites: None.

AUT107AD  Lec + Lab  4 Credits  7 Periods
**Automotive Air Conditioning**
The theory and principles of refrigeration and air conditioning. Training in diagnosis, servicing, and reconditioning procedures of automotive air conditioning systems including electronic system controls. Prerequisites: A grade of C or better in AUT103AA.

AUT108AB  Lec + Lab  4 Credits  7 Periods
**Front-End Suspension, Steering, and Alignment**
The fundamentals and principles of suspension and steering systems. Diagnosis, service, and reconditioning procedures. Laboratory emphasis on front-end service and alignment. Prerequisites: None.

AUT109AC  Lec + Lab  4 Credits  7 Periods
**Automotive Brake Systems**
Designed for beginning automotive students. Fundamentals of drum, disc, and ABS brakes. Includes training in diagnosis, testing, service, and repair. Prerequisites: None.

AUT110AC  Lec + Lab  4 Credits  7 Periods
**Automotive Power Trains**
Designed for beginning automotive students. The principle of electricity; the mathematical computations involved with Ohm’s Law; the use of meters; electrical schematics; the theory of electrical components as they relate to automobiles; the diagnosis, testing, service and repair of batteries, starting systems and charging systems, lighting systems and instrumentation. Prerequisites: None.

AUT123  Lec 6 Credits  Lec 4 Periods / Lab 0 Credits  Lab 6 Periods
**Automatic Transmissions**
Theory of operation and servicing procedures for current automatic transmissions. Prerequisites: A grade of C or better in (AUT103AA and AUT104AA) or permission of Instructor.

AUT123AA  Lec + Lab  4 Credits  8 Periods
**Automatic Transmissions**
Theory of operation and servicing procedures for current domestic automatic transmissions; includes diagnostics and testing of mechanical, electrical, and hydraulic components. Prerequisites: None.
Course Listings 2019-2020

**BIO100** Lec 4 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 3 Periods

**Biology Concepts**
Introductory course covering basic principles and concepts of biology. Methods of scientific inquiry and behavior of matter and energy in biological systems are explored. Field trips may be required at students’ expense. Prerequisites: None.

**BIO105** Lec 4 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 3 Periods

**Environmental Biology**
Fundamentals of ecology and their relevance to human impact on natural ecosystems. Field trips may be required at students’ expense. Prerequisites: None.

**BIO145** Lec 4 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 3 Periods

**Marine Biology**
A survey of marine environments and their biotic communities with emphasis on the natural history of marine organisms. Prerequisites: None.

**BIO156** Lec 4 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 3 Periods

**Introductory Biology for Allied Health**
An introductory biology course for allied health majors with an emphasis on humans. Topics include fundamental concepts of cell biology, histology, microbiology and genetics. Prerequisites: A grade of C or better in RDG100 or higher or eligibility for CRE101. One year of high school or one-semester of college level chemistry is strongly recommended.

**BIO160** Lec 4 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 3 Periods

**Introduction to Human Anatomy and Physiology**
Principles of scientific method. Structural organization, homeostasis and control mechanisms of the body. Specific chemistry concepts. Structure and function of the major systems of the body. Prerequisites: None.

**BIO181** Lec 4 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 3 Periods

**General Biology (Majors)**
SUN# 1181
The study and principles of structure and function of organisms at the molecular and cellular levels. A detailed exploration of the chemistry of life, the cell, and genetics. Prerequisites: A grade of C or better in RDG100 or higher or eligibility for CRE101. One year of high school or one semester of college-level biology and chemistry is strongly recommended.

**BIO182** Lec 4 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 3 Periods

**General Biology (Majors) II**
SUN# 1182
The study and principles of structure and function of living things at cellular, organismic, and higher levels of organization. A detailed exploration of the mechanisms of evolution, biological diversity, biology of organisms, and ecology. BIO182 may require field trips. Prerequisites: A grade of C or better in BIO181 or BIO181XT.

**BIO201** Lec 4 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 3 Periods

**Human Anatomy and Physiology I**
SUN# 2201
Study of structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system. Prerequisites: (A grade of C or better in BIO156 or BIO156XT or BIO181 or BIO181XT or one year of high school biology) and a grade of C or better in RDG100 or higher or eligibility for CRE101. CHM130 or higher or one year of high school chemistry suggested but not required.

Course Listings 2019-2020

**BIO202** Lec 4 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 3 Periods

**Human Anatomy and Physiology II**
SUN# 2202
Continuation of structure and function of the human body. Topics include endocrine, circulatory, lymphatic, respiratory, digestive, urinary and reproductive systems; and fluid and electrolyte balance. Prerequisites: A grade of C or better in BIO201 or BIO201XT.

**BIO205** Lec 4 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 3 Periods

**Microbiology**
SUN# 2205
Study of microorganisms and their relationship to health, ecology, and related fields. Prerequisites: (A grade of C or better in BIO156 or BIO156XT or BIO181 or BIO181XT or one year of high school biology) and a grade of C or better in RDG100 or higher or eligibility for CRE101. CHM130 or higher or one year of high school chemistry suggested but not required.

**BIO295AA** Lab 1 Credit  1 Period

**Independent Research in Biology**
Original scientific investigation of biological phenomenon. BIO295AA requires a minimum of 80 hours of independent laboratory and/or field study. BIO295AA may be repeated for credit. Prerequisites: A grade of C or better in (BIO156 or BIO181) and permission of Instructor.

**BIO295AB** Lab 2 Credits  2 Periods

**Independent Research in Biology**
Original scientific investigation of biological phenomenon. BIO295AB requires a minimum of 160 hours of independent laboratory and/or field study. BIO295AB may be repeated for credit. Prerequisites: A grade of C or better in (BIO156 or BIO181) and permission of Instructor.

**BIO295AC** Lab 3 Credits  3 Periods

**Independent Research in Biology**
Original scientific investigation of biological phenomenon. BIO295AC requires a minimum of 240 hours of independent laboratory and/or field study. BIO295AC may be repeated for credit. Prerequisites: A grade of C or better in (BIO156 or BIO181) and permission of Instructor.

**BPC110** Lec + Lab 3 Credits 4 Periods

**Computer Usage and Applications**
Introduction to business and personal computer operations and usage. Software applications for analyzing and solving business problems including word processing, spreadsheet, database, and presentation graphics. Prerequisites: None.

**BPC170** Lec + Lab 3 Credits 4 Periods

**A+ Exam Prep: Computer Hardware Configuration and Support**
Explore technical aspects of personal computers, including system components, installation, system configuration, peripheral devices, and notebooks. Emphasis placed on hardware installation, maintenance, mobile devices, and hardware troubleshooting. Helps prepare students for the CompTIA A+ examinations. Prerequisites: A grade of C or better in CIS105 or permission of instructor.

**BPC270** Lec + Lab 3 Credits 4 Periods

**A+ Exam Prep: Operating System Configuration and Support**
Explore advanced technical aspects of maintaining and servicing computers. Emphasis placed on OS installation, maintenance, mobile devices, security, software troubleshooting, and on proper usage of tools, safety procedures, and professionalism. Helps prepare students for the CompTIA A+ examinations. Prerequisites: A grade of C or better in CIS105 or permission of instructor.
Higher or one year of high school chemistry suggested but not required.

Human Anatomy and Physiology II
SUN# 2202
Continuation of structure and function of the human body. Topics include endocrine, circulatory, lymphatic, respiratory, digestive, urinary and reproductive systems; and fluid and electrolyte balance. Prerequisites: A grade of C or better in BIO201 or BIO201XT.

Microbiology
SUN# 2205
Study of microorganisms and their relationship to health, ecology, and related fields. Prerequisites: A grade of C or better in BIO156 or BIO156XT or BIO181 or BIO181XT or one year of high school biology and a grade of C or better in RDG100 or higher or eligibility for CRE101. CHM130 or higher or one year of high school chemistry suggested but not required.

Independent Research in Biology

Majors I
SUN# 1181
The study and principles of structure and function of the major systems of the body. Prerequisites: None.

Majors II
SUN# 1182
The study and principles of structure and function of the major systems of the body. Prerequisites: None.

Human Anatomy and Physiology I
SUN# 2201
Study of structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system. Prerequisites: (A grade of C or better in BIO156 or BIO156XT or BIO181 or BIO181XT or one year of high school biology) and a grade of C or better in RDG100 or higher or eligibility for CRE101. CHM130 or higher or one year of high school chemistry suggested but not required.

Business and personal computer operations and usage. Software applications for analyzing and solving business problems including word processing, spreadsheet, database, and presentation graphics. Prerequisites: None.

Computer Usage and Applications

A+ Exam Prep: Computer Hardware Configuration and Support
Explore technical aspects of personal computers, including system components, installation, system configuration, peripheral devices, and notebooks. Emphasis placed on hardware installation, maintenance, mobile devices, and hardware troubleshooting. Helps prepare students for the CompTIA A+ examinations. Prerequisites: A grade of C or better in CIS105 or permission of instructor.

A+ Exam Prep: Operating System Configuration and Support
Explore advanced technical aspects of maintaining and servicing computers. Emphasis placed on OS installation, maintenance, mobile devices, security, software troubleshooting, and on proper usage of tools, safety procedures, and professionalism. Helps prepare students for the CompTIA A+ examinations. Prerequisites: A grade of C or better in CIS105 or permission of instructor.
**Course Listings 2019-2020**

### (CEA) COSMETOLOGY

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
<th>Credits</th>
<th>Periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEA101</td>
<td>388</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cosmetology Concepts and Basic Clinic</td>
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</tbody>
</table>

Students will be introduced to the basics of cosmetology. Introduction to the Arizona State Board of Cosmetology, safety and sanitation, rules and regulations. Students will begin the basics of fundamental theory of cosmetology in hair cutting, hair coloring, texture services and professional development. Students will be introduced to the concepts of guest services including client consultations, dispensary, laundry and front desk procedures. Prerequisites: Admission into the Cosmetologist High School program.

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<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
<th>Credits</th>
<th>Periods</th>
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</thead>
<tbody>
<tr>
<td>CEA105</td>
<td>412</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cosmetology Concepts and Basic Clinic II</td>
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</tbody>
</table>

Students will continue to develop the basics of fundamental theory of cosmetology in hair cutting, hair coloring, texture services and professional development. Students will continue to develop guest services, client consultations, dispensary, laundry, inventory, and front desk procedures. Students will assist other advanced students on clinic floor and begin to take clients. Students will learn advanced techniques for all color services; to include coloring services, highlighting, foiling, balayage, free painting, ombre, color correction and fashion colors. Students will also learn hair extensions and enhancements. Students will learn advanced techniques for texture services, to include, perming, relaxing, straightening, and natural styling. Prerequisites: CEA101 or Program Manager’s permission.

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<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
<th>Credits</th>
<th>Periods</th>
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</thead>
<tbody>
<tr>
<td>CEA110</td>
<td>388</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cosmetology Advanced Clinic and Certification Prep</td>
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</tbody>
</table>

Students will complete a model using the techniques learned thus far and apply them to an editorial project. Students will work with models to complete avant garde looks for hair styling and will learn what job opportunities are available in this career. Students enrolled in this course will apply knowledge of what has been learned in hair styling, chemical services and hair cutting to the public in the clinic. Students will revisit safety and sanitation and Arizona State Board of Cosmetology rules and regulations. State board boot camp will be started in this class. Fundamental nail technology will be covered. Prerequisites: CEA105 or Program Manager’s permission.

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<tr>
<th>Course Code</th>
<th>Hours</th>
<th>Credits</th>
<th>Periods</th>
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<tbody>
<tr>
<td>CEA115</td>
<td>412</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cosmetology Advanced Clinic and Certification Prep II</td>
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</table>

Students enrolled in this course will apply knowledge of what has been learned in hair styling, chemical services and hair cutting to the public in the clinic. Students will revisit safety and sanitation and Arizona State Board of Cosmetology rules and regulations. State board boot camp will be completed in this class. Fundamental nail technology course for cosmetology students who are looking to obtain a cosmetology license. State board prep for certification. Prerequisites: CEA110 or Program Manager’s permission.

### (CHM) CHEMISTRY

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
<th>Credits</th>
<th>Periods</th>
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<tbody>
<tr>
<td>CHM130</td>
<td>Lecture 3</td>
<td>Credits 3</td>
<td>Periods 3</td>
</tr>
<tr>
<td>Fundamental Chemistry</td>
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</table>

A survey of the fundamentals of general chemistry. Emphasis on essential concepts and problem solving techniques. Basic principles of measurement, chemical bonding, structure and reactions, nomenclature, and the chemistry of acids and bases. Preparation for students taking more advanced courses in chemistry. Designed to meet needs of students in such diverse areas as agriculture, nursing, home economics, physical education and water technology. Prerequisites: A grade of C or better in [CHM090 or MAT090 or MAT091 or MAT092 or (MAT103AA and MAT103AB) or higher level mathematics course or satisfactory score on math placement exam] and (a grade of C or better in [CHM130 or MAT103AA] or (CHM130, or CHM130A, or one year of high school chemistry taken within the last five years) and (a grade of C or better in MAT151 or higher level mathematics course, or satisfactory score on placement exam), or permission of the Instructor, or Department or Division Chair.

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<tr>
<th>Course Code</th>
<th>Hours</th>
<th>Credits</th>
<th>Periods</th>
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</thead>
<tbody>
<tr>
<td>CHM130LL</td>
<td>Lab 1</td>
<td>Credit 3</td>
<td>Periods 3</td>
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<tr>
<td>Fundamental Chemistry Laboratory</td>
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Laboratory experience in support of CHM130. Prerequisites or Corequisites: A grade of C or better in CHM130.

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<tbody>
<tr>
<td>CHM151</td>
<td>Lecture 3</td>
<td>Credits 3</td>
<td>Periods 3</td>
</tr>
<tr>
<td>General Chemistry I</td>
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</table>

Detailed study of principles of chemistry for science majors and students in pre-professional curricula. Completion of all prerequisites within the last two years is recommended. Student may receive credit for only one of the following: CHM150 and CHM151LL, or CHM150 and CHM151LL, or CHM150AA, or CHM151AA. Prerequisites: A grade of C or better in [CHM130 and CHM130LL, or CHM130AA, or one year of high school chemistry taken within the last five years] and (a grade of C or better in MAT151 or higher level mathematics course, or satisfactory score on placement exam), or permission of the Instructor, or Department or Division Chair.

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<tbody>
<tr>
<td>CHM151LL</td>
<td>Lab 1</td>
<td>Credit 3</td>
<td>Periods 3</td>
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<tr>
<td>General Chemistry I Laboratory</td>
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</table>

Laboratory experience in support of CHM150 or CHM151. Student may receive credit for only one of the following: CHM150 and CHM151LL, or CHM150 and CHM151LL, or CHM150AA, or CHM151AA. Prerequisites: A grade of C or better in CHM150 or CHM151 or Corequisites: CHM150 or CHM151.

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<th>Course Code</th>
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<th>Credits</th>
<th>Periods</th>
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<tbody>
<tr>
<td>CHM152</td>
<td>Lecture 3</td>
<td>Credits 3</td>
<td>Periods 3</td>
</tr>
<tr>
<td>General Chemistry II</td>
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</table>

A study of the chemical properties of the major groups of elements, equilibrium theory, thermodynamics, electrochemistry, and other selected topics. Completion of CHM152LL required to meet the Natural Science requirement. Student may receive credit for only one of the following: CHM152 and CHM152LL, or CHM152AA. Prerequisites: A grade of C or better in [CHM150 or CHM151] and CHM151LL), or CHM150AA, or CHM151AA, or permission of the Instructor, or Department or Division Chair.

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<tr>
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<th>Credits</th>
<th>Periods</th>
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</thead>
<tbody>
<tr>
<td>CHM152AA</td>
<td>Lecture 4</td>
<td>Credits 3</td>
<td>Periods 3</td>
</tr>
<tr>
<td>General Chemistry II</td>
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</tbody>
</table>

A study of the chemical properties of the major groups of elements, equilibrium theory, thermodynamics, electrochemistry, and other selected topics. Completion of prerequisites within the last two years recommended. Student may receive credit for only one of the following: CHM152 and CHM152LL, or CHM152AA. Prerequisites: A grade of C or better in [CHM150 or CHM151] and CHM151LL), or CHM150AA, or CHM151AA, or permission of the Instructor, or Department or Division Chair.

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</thead>
<tbody>
<tr>
<td>CHM152LL</td>
<td>Lab 1</td>
<td>Credit 3</td>
<td>Periods 3</td>
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<tr>
<td>General Chemistry II Laboratory</td>
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Laboratory experience in support of CHM152. Student may receive credit for only one of the following: CHM152 and CHM152LL, or CHM152AA. Prerequisites: A grade of C or better in CHM152 or Corequisites: CHM152.

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<tbody>
<tr>
<td>CHM230</td>
<td>Lecture 3</td>
<td>Credits 3</td>
<td>Periods 3</td>
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<tr>
<td>Fundamental Organic Chemistry</td>
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</table>

Chemistry of representative groups of organic compounds, emphasizing biological applications. CHM230 course content is designed to meet the needs of students in such areas as agriculture, home economics, nursing, pre-physician assistant, and physical education among others. Prerequisites: A grade of C or better in [CHM130 and CHM130LL, or CHM150 or CHM151 and CHM151LL]. Completion of (CHM130 and CHM130LL) or (CHM150 and CHM151 and CHM151LL) within the last two years recommended.

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<tr>
<td>CHM230LL</td>
<td>Lab 1</td>
<td>Credit 3</td>
<td>Periods 3</td>
</tr>
<tr>
<td>Fundamental Organic Chemistry Laboratory</td>
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</table>

Laboratory experience in support of CHM230. Prerequisites: A grade of C or better in CHM130LL or CHM151LL or equivalent or Corequisites: CHM230.
**Course Listings 2019-2020**

**(CEA) COSMETOLOGY**

**CEA101** 388 Clock Hours

Cosmetology Concepts and Basic Clinic

Students will be introduced to the basics of cosmetology. Introduction to the Arizona State Board of Cosmetology, safety and sanitation, rules and regulations. Students will begin the basics of fundamental theory of cosmetology in hair cutting, hair coloring, texture services and professional development. Students will be introduced to the concepts of guest services including client consultations, dispensary, laundry and front desk procedures. Prerequisites: Admission into the Cosmetologist High School program.

**CEA105** 412 Clock Hours

Cosmetology Concepts and Basic Clinical II

Students will continue to develop the basics of fundamental theory of cosmetology in hair cutting, hair coloring, texture services and professional development. Students will continue to develop guest services, client consultations, dispensary, laundry, inventory, and front desk procedures. Students will assist other advanced students on clinic floor and begin to take clients. Students will learn advanced techniques for all color services; to include coloring services, highlightimg, foiling, balayage, free painting, ombre, color correction and fashion colors. Students will also learn hair extensions and enhancements. Students will learn advanced techniques for texture services, to include, perming, relaxing, straightening, and natural styling. Prerequisites: CEA101 or Program Manager's permission.

**CEA110** 388 Clock Hours

Cosmetology Advanced Clinic and Certification Prep

Students will complete a model using the techniques learned thus far and apply them to an editorial project. Students will work with models to complete avant garde looks for hair styling and will learn what job opportunities are available in this career. Students enrolled in this course will apply knowledge of what has been learned in hair styling, chemical services and hair cutting to the public in the clinic. Students will revisit safety and sanitation and Arizona State Board of Cosmetology rules and regulations. State board boot camp will be started in this class. Fundamental nail technology will be covered. Prerequisites: CEA105 or Program Manager's permission.

**CEA115** 412 Clock Hours

Cosmetology Advanced Clinic and Certification Prep II

Students enrolled in this course will apply knowledge of what has been learned in hair styling, chemical services and hair cutting to the public in the clinic. Students will revisit safety and sanitation and Arizona State Board of Cosmetology rules and regulations. State board boot camp will be completed in this class. Fundamental nail technology course for cosmetology students who are looking to obtain a cosmetology license. State board prep for certification. Prerequisites: CEA110 or Program Manager's permission.

**(CHM) CHEMISTRY**

**CHM130** Lecture 3 Credits 3 Periods

Fundamental Chemistry

A study of the chemical properties of the major groups of elements, equilibrium theory, thermodynamics, electrochemistry, and other selected topics. Completion of CHM152LL required to meet the National Science requirement. Student may receive credit for only one of the following: CHM152 and CHM152LL, or CHM152 and CHM152AA. Prerequisites: A grade of C or better in [CHM150 and CHM151LL, or CHM150AA, or CHM151AA, or permission of the Instructor, or Department or Division Chair].

**CHM151** Lecture 3 Credits 3 Periods

General Chemistry I

Detailed study of principles of chemistry for science majors and students in pre-professional curricula. Completion of all prerequisites within the last two years is recommended. Student may receive credit for only one of the following: CHM150 and CHM151LL, or CHM151AA, or CHM151LL. Prerequisites: A grade of C or better in [CHM130 and CHM130LL, or CHM130AA, or one year of high school chemistry taken within the last five years] and a grade of C or better in MAT151 or higher level mathematics course, or satisfactory score on placement exam, or permission of the Instructor, or Department or Division Chair.

**CHM151LL** Lab 1 Credit 3 Periods

General Chemistry I Laboratory

Laboratory experience in support of CHM150 or CHM151. Student may receive credit for only one of the following: CHM150 and CHM151LL, or CHM151 and CHM151LL, or CHM150AA, or CHM151AA. Prerequisites: A grade of C or better in CHM150 or CHM151 or Corequisites: CHM150 or CHM151.

**CHM152** Lecture 3 Credits 3 Periods

General Chemistry II

A study of the chemical properties of the major groups of elements, equilibrium theory, thermodynamics, electrochemistry, and other selected topics. Completion of CHM152LL required to meet the National Science requirement. Student may receive credit for only one of the following: CHM152 and CHM152LL, or CHM152AA. Prerequisites: A grade of C or better in [CHM150 or CHM151] and CHM151LL, or CHM150AA, or CHM151AA, or permission of the Instructor, or Department or Division Chair.

**CHM152AA** Lecture 4 Credits 3 Periods

General Chemistry II

A study of the chemical properties of the major groups of elements, equilibrium theory, thermodynamics, electrochemistry, and other selected topics. Completion of prerequisites within the last two years recommended. Student may receive credit for only one of the following: CHM152 and CHM152LL, or CHM152AA. Prerequisites: A grade of C or better in [CHM150 or CHM151] and CHM151LL, or CHM150AA, or CHM151AA, or permission of the Instructor, or Department or Division Chair.

**CHM152LL** Lab 1 Credit 3 Periods

General Chemistry II Laboratory

Laboratory experience in support of CHM152. Student may receive credit for only one of the following: CHM152 and CHM152LL, or CHM152AA. Prerequisites: A grade of C or better in CHM152 or Corequisites: CHM152.

**CHM230** Lecture 3 Credits 3 Periods

Fundamental Organic Chemistry

Chemistry of representative groups of organic compounds, emphasizing biological applications. CHM230 course content is designed to meet the needs of students in such areas as agriculture, home economics, physical education and water technology. Prerequisites: A grade of C or better in ([CHM100 or MAT090) or MAT091 or MAT092 or (MAT103AA and MAT103AB) or higher level mathematics course or satisfactory score on math placement exam) and (RDG100 or higher or eligibility for CRE101 as indicated by appropriate reading placement test score), or permission of the Instructor, or Department or Division Chair.
CHM235  Lecture 3 Credits 3 Periods
**General Organic Chemistry I SUN# CHM235**
Rigorous introduction to chemistry of carbon-containing compounds. Reaction mechanisms and recent methods of synthesis emphasized. Completion of prerequisites within the last two years recommended. Prerequisites: A grade of C or better in (CHM152 and CHM152LL), or CHM152AA, or (CHM154 and CHM154LL), or permission of the Instructor, or Department or Division Chair.

CHM235LL Lab 1 Credit 4 Periods
**General Organic Chemistry I Laboratory SUN# CHM2235**
Laboratory experience in support of CHM235. Prerequisites: A grade of C or better in CHM235 or Corequisites: CHM235. Completion of prerequisites within the last two years recommended.

(CIS) COMPUTER INFORMATION SYSTEMS

CIS102 Lecture 1 Credit 1 Period
**Interpersonal and Customer Service Skills for IT Professionals**
Examines behaviors necessary to develop and support an effective client service organization. Focuses on methods of increasing the effectiveness of help-desk professionals when responding to a range of customer conditions. Prerequisites: None.

CIS105 Lec + Lab 3 Credits 4 Periods
**Survey of Computer Information Systems SUN# CIS1120**
Overview of computer technology, concepts, terminology, and the role of computers in business and society. Discussion of social and ethical issues related to computers. Use of word processing, spreadsheet, database, and presentation software. Includes uses of application software and the Internet for efficient and effective problem solving. Exploration of relevant emerging technologies. Prerequisites: None.

CIS114DE Lec + Lab 3 Credits 5 Periods
**Excel Spreadsheet**
Computer spreadsheet skills for solving business problems using Excel, including calculations, forecasting, projections, macro programming, database searching, extraction, linking, statistics, and matrix manipulation. Production of graphs and reports. Project design using multiple, integrated spreadsheets. CIS114DE may be repeated for a total of nine (9) credit hours. Prerequisites: None.

CIS121AB Lec + Lab 1 Credit 2 Periods
**Microsoft Command Line Operation**
Use of the Microsoft command line interface: basic concepts, internal and external commands, subdirectories, and editor. Prerequisites: None.

CIS126DL Lec + Lab 3 Credits 4 Periods
**Linux Operating System**
Introduction to the Linux operating system. Develop knowledge and skills required to install, configure and troubleshoot a Linux-based workstation including basic network functions. Learn basic command line and Graphical User Interface (GUI) desktop environment utilities and applications. Fundamental abilities to achieve the entry-level industry certification covered. Prerequisites: None.

CIS133DA Lec + Lab 3 Credits 4 Periods
**Internet/Web Development Level I**
Overview of the Internet/WWW and its resources. Hands-on experience with various Internet/WWW communication, resource discovery, and information retrieval tools. Web page development also included. Prerequisites: None.

CIS150AB Lec + Lab 3 Credits 4 Periods
**Object-Oriented Programming Fundamentals**
Structured and object-oriented design and logic tools. Use of computer problems to demonstrate and teach concepts using an appropriate programming language. Prerequisites: A grade of C or better in CIS105 or permission of instructor.

CIS156 Lec + Lab 3 Credits 4 Periods
**Python Programming: Level I**
Use of the Python programming language to solve problems using suitable examples from business or other disciplines. Prerequisites: A grade of C or better in CIS105 or permission of instructor.

CIS162AD Lec + Lab 3 Credits 4 Periods
**C#: Level I**
Introduction to C# programming including general concepts, program design, development, data types, operators, expressions, flow control, functions, classes, input and output operations, debugging, structured programming, and object-oriented programming. Prerequisites: A grade of C or better in CIS105 or permission of instructor.

CIS163AA Lec + Lab 3 Credits 4 Periods
**Java Programming: Level I**
Introduction to Java programming. Includes features needed to construct Java Applets, Java applications, control structures, methods, arrays, character and string manipulation, graphics, and object-oriented programming. Prerequisites: A grade of C or better in CIS105 or permission of instructor.

CIS262AD Lec + Lab 3 Credits 4 Periods
**C#: Level II**
Advanced C# programming with emphasis on data structures, dynamic memory allocation, object-oriented programming, user interfaces, and database processing. Overview of web applications, network programming, and reporting tools. Prerequisites: A grade of C or better in CIS162AD or permission of instructor.

CIS263AA Lec + Lab 3 Credits 4 Periods
**Java Programming: Level II**
Intermediate Java programming. Includes features needed to construct object-oriented programming, multimedia, files, streams and data structure. Prerequisites: A grade of C or better in CIS163AA or permission of Instructor.

CIS270 Lec + Lab 3 Credits 4 Periods
**Essentials of Network and Information Security**
Threats to security of information systems; responsibilities and basic tools for information security, communication security, infrastructure security, organizational security and basic cryptography. Introduction to the language of network security and hardware, software and firmware components of an information security system for local, metropolitan, enterprise, and wide area networks. Helps prepare participants for the CompTIA Security+ exam and the GIAC Security Essentials Certificate (GSEC). Prerequisites: A grade of C or better in CNT1150 or any MST1150 course or permission of Instructor.

CIS280 Lec + Lab 3 Credits 4 Periods
**Current Topics in Computing**
Critical inquiry of current topics in computing. Application of industry trends to solve problems and/or investigate issues. Prerequisites: None.

CIS290AA Lab 1 Credit 6 Periods
**Computer Information Systems Internship**
Work experience in business or industry. Prerequisites: Permission of Instructor.
CIS235DA  Lecture  3 Credits  4 Periods
General Organic Chemistry I  SUN# CHM235
Rigorous introduction to chemistry of carbon-containing compounds. Reaction mechanisms and recent methods of synthesis emphasized. Completion of prerequisites within the last two years recommended. Prerequisites: A grade of C or better in (CHM152 and CHM152LL), or CHM154A, or (CHM154 and CHM154LL), or permission of the Instructor, or Department or Division Chair.

CHM235LL Lab  1 Credit  4 Periods
General Organic Chemistry I Laboratory  SUN# CHM2235
Laboratory experience in support of CHM235. Prerequisites: A grade of C or better in CHM235 or Corequisites: CHM235. Completion of prerequisites within the last two years recommended.

(CIS) COMPUTER INFORMATION SYSTEMS
CIS102  Lecture  1 Credit  1 Period
Interpersonal and Customer Service Skills for IT Professionals
Examines behaviors necessary to develop and support an effective client service organization. Focusses on methods of increasing the effectiveness of help-desk professionals when responding to a range of customer conditions. Prerequisites: None.

CIS105  Lecture + Lab  3 Credits  4 Periods
Survey of Computer Information Systems  SUN# CIS1120
Overview of computer technology, concepts, terminology, and the role of computers in business and society. Discussion of social and ethical issues related to computers. Use of word processing, spreadsheet, database, and presentation software. Includes uses of application software and the Internet for efficient and effective problem solving. Exploration of relevant emerging technologies. Prerequisites: None.

CIS114DE Lecture + Lab  3 Credits  5 Periods
Excel Spreadsheet
Computer spreadsheet skills for solving business problems using Excel, including calculations, forecasting, projections, macro programming, database searching, extraction, linking, statistics, and matrix manipulation. Production of graphs and reports. Project design using multiple, integrated spreadsheets. CIS114DE may be repeated for a total of nine (9) credit hours. Prerequisites: None.

CIS121AB Lecture + Lab  1 Credit  2 Periods
Microsoft Command Line Operation
Use of the Microsoft command line interface: basic concepts, internal and external commands, subdirectories, and editor. Prerequisites: None.

CIS126DL Lecture + Lab  3 Credits  4 Periods
Linux Operating System
Introduction to the Linux operating system. Develop knowledge and skills required to install, configure and troubleshoot aLinux-based workstation including basic network functions. Learn basic command line and Graphical User Interface (GUI) desktop environment utilities and applications. Fundamental abilities to achieve the entry-level industry certification covered. Prerequisites: None.

CIS133DA Lecture + Lab  3 Credits  4 Periods
Internet/Web Development Level I
Overview of the Internet/WWW and its resources. Hands-on experience with various Internet/WWW communication, resource discovery, and information retrieval tools. Web page development also included. Prerequisites: None.

CHM235 Lecture  3 Credits  3 Periods
General Organic Chemistry I  SUN# CHM235
Overview of the Internet/WWW and its resources. Hands-on experience with various Internet/WWW communication, resource discovery, and information retrieval tools. Web page development also included. Prerequisites: None.
CIS290AB Lab 2 Credits 12 Periods
Computers Information Systems Internship
Work experience in business or industry. Prerequisites: Permission of Instructor.

CIS290AC Lab 3 Credits 18 Periods
Computers Information Systems Internship
Work experience in business or industry. Prerequisites: Permission of Instructor.

**CNP COMPUTER SUPPORT**

CNP104 216 Clock Hours
Windows Operating System and PC Hardware
Introduction to various aspects of personal computers. Explore various techniques of system components including installation, configuration, and troubleshooting. Identify different operating systems and software utilized in personal computers, including proper installation, configuration and troubleshooting. Emphasis placed on proper usage of tools, procedures and professionalism. Prerequisites: ISP116.

CNP141 156 Clock Hours
PC Peripherals and Troubleshooting I
Learn about personal computer (PC) peripherals and more advanced troubleshooting techniques. Topics covered include advanced troubleshooting of hardware, advanced troubleshooting of operating systems (OS), advanced troubleshooting of networks, malware removal, printers, scanners and security. Prerequisites: CNP108.

CNP142 82 Clock Hours
PC Peripherals and Troubleshooting II
Students will further their development in advanced troubleshooting of operating systems (OS), advanced troubleshooting of networks, malware removal, printers, scanners and security. Prerequisites: CNP141.

CNP205 192 Clock Hours
Introduction to Network Concepts
Introduction to the computer networking field that covers network terminology and protocols, communication fundamentals in data networks and the Internet. Emphasis placed on the OSI model, Internet Protocol (IP) addressing, cabling installation and basic network configuration. Prerequisites: CNP104 or approval of Instructor or Program Manager.

CNP210 180 Clock Hours
Computer Maintenance and Troubleshooting
Further development on more advanced troubleshooting techniques. Topics covered include advanced troubleshooting of hardware, operating systems, and networks. In addition, explore malware removal and various security techniques. Prerequisites: CNP205 or approval of Instructor or Program Manager.

CNP215 315 Clock Hours
Networking Basics
Introduction to basic network concepts. Explore the concepts behind the OSI model and the various networking terms. Identify services used in networking such as DHCP, DNS, and the various protocols. Understand subnetting and how it is utilized in networks. Further explore IP addresses and how they are developed, including ways used to calculate IP addresses. Learn about various topologies utilized in networks. Prerequisites: CNP210 or approval of Instructor or Program Manager.

CNP225 168 Clock Hours
Network Technologies
Explore the different equipment that will be utilized in computer networking. Learn about the various routing and switching methods. Develop the skills to work within different WAN and LAN environments. Identify the different physical media used within networking. Understand the different standards utilized in various networking equipment. Prerequisites: None.

CNP230 157 Clock Hours
Network Troubleshooting and Solutions
Learn and identify various network threats seen in networking. Identify the different methods used to attack networks, including how to combat them. Explore various troubleshooting methods utilized in multiple network sizes. Also further explore the different tools that will be used as part of the troubleshooting process, including both physical and software tools. Prerequisites: None.

CNP250 400 Clock Hours
Information Security
Introduction to various concepts throughout the security field. Explore, identify, and defend against various threats in the security world. Further explore the multiple components (both software and hardware) utilized in the security field. This includes technologies such as cloud, automation, and how to secure systems. Identify various methods on access and risk management within networks. Explore various services and methods on data security and recovery. This includes forensics and disaster recovery in conjunction with data and the concept of cryptography. Prerequisites: None.

**CNS CONSTRUCTION**

CNS290AA Lab 1 Credit 6 Periods
Construction Internship
Construction internship office/field experience with private/public agencies or citizen volunteer groups. One hundred and sixty (160) hours of designated work experience. Standard grading available according to procedures outlined in college catalog. Prerequisites: Permission of Department or Division. Cross-References: CON290AA.

CNS290AB Lab 2 Credits 12 Periods
Construction Internship
Construction internship office/field experience with private/public agencies or citizen volunteer groups. One hundred and sixty (160) hours of designated work experience. Standard grading available according to procedures outlined in college catalog. Prerequisites: Permission of Department or Division. Cross-References: CON290AB.

CNS290AC Lab 3 Credits 18 Periods
Construction Internship
Construction internship office/field experience with private/public agencies or citizen volunteer groups. Two hundred and forty (240) hours of designated work. Standard grading available according to procedures outlined in college catalog. Prerequisites: Permission of Department or Division. Cross-References: CON290AC.

**CNT CISCO NETWORKING TECHNOLOGY**

CNT140AA Lec + Lab 4 Credits 6 Periods
Introduction to Networks
Introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced. Students will build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Preparation for Cisco certification examination. Prerequisites: None.
**Course Listings 2019-2020**

**CIS290AB**  Lab 2 Credits 12 Periods
**Computer Information Systems Internship**
Work experience in business or industry. Requisites: Permission of Instructor.

**CIS290AC**  Lab 3 Credits 18 Periods
**Computer Information Systems Internship**
Work experience in business or industry. Requisites: Permission of Instructor.

**(CNP) COMPUTER SUPPORT**

**CNP104**  216 Clock Hours
**Windows Operating System and PC Hardware**
Introduction to various aspects of personal computers. Explore various techniques of system components including installation, configuration and troubleshooting. Identify different operating system and software utilized in personal computers, including proper installation, configuration and troubleshooting. Emphasis placed on proper usage of tools, procedures and professionalism. Prerequisites: ISP116.

**CNP141**  156 Clock Hours
**PC Peripherals and Troubleshooting I**
Learn about personal computer (PC) peripherals and more advanced troubleshooting techniques. Topics covered include advanced troubleshooting of hardware, advanced troubleshooting of operating systems (OS), advanced troubleshooting of networks, malware removal, printers, scanners and security. Prerequisites: CNP108.

**CNP142**  82 Clock Hours
**PC Peripherals and Troubleshooting II**
Students will further their development in advanced troubleshooting of operating systems (OS), advanced troubleshooting of networks, malware removal, printers, scanners and security. Prerequisites: CNP141.

**CNP205**  192 Clock Hours
**Introduction to Network Concepts**
Introduction to the computer networking field that covers network terminology and protocols, communication fundamentals in data networks and the Internet. Emphasis placed on the OSI model, Internet Protocol (IP) addressing, cabling installation and basic network configuration. Prerequisites: CNP104 or approval of Instructor or Program Manager.

**CNP210**  180 Clock Hours
**Computer Maintenance and Troubleshooting**
Further development on more advanced troubleshooting techniques. Topics covered include advanced troubleshooting of hardware, operating systems, and networks. In addition, explore malware removal and various security techniques. Prerequisites: CNP205 or approval of Instructor or Program Manager.

**CNP215**  315 Clock Hours
**Networking Basics**
Introduction to basic network concepts. Explore the concepts behind the OSI model and the various networking terms. Identify services used in networking such as DHCP, DNS, and the various protocols. Understand subnetting and how it is utilized in networks. Further explore IP addresses and how they are developed, including ways used to calculate IP addresses. Learn about various topologies utilized in networks. Prerequisites: CNP210 or approval of Instructor or Program Manager.

**CNP225**  168 Clock Hours
**Network Technologies**
Explore the different equipment that will be utilized in computer networking. Learn about various routing and switching methods. Develop the skills to work within different WAN and LAN environments. Identify the different physical media used within networking. Understand the different standards utilized in various networking equipment. Prerequisites: None.

**CNP230**  157 Clock Hours
**Network Troubleshooting and Solutions**
Learn and identify various network threats seen in networking. Identify the different methods used to attack networks, including how to combat them. Explore various troubleshooting methods utilized in multiple network sizes. Also further explore the different tools that will be used as part of the troubleshooting process, including both physical and software tools. Prerequisites: None.

**CNP250**  400 Clock Hours
**Information Security**
Introduction to various concepts throughout the security field. Explore, identify, and defend against various threats in the security world. Further explore the multiple components (both software and hardware) utilized in the security field. This includes technologies such as cloud, automation, and how to secure systems. Identify various methods on access and risk management within networks. Explore various services and methods on data security and recovery. This includes forensics and disaster recovery in conjunction with data and the concept of cryptography. Prerequisites: None.

**(CNS) CONSTRUCTION**

**CNS290AA**  Lab 1 Credit 6 Periods
**Construction Internship**
Construction internship office/field experience with private/public agencies or citizen volunteer groups. One hundred and sixty (160) hours of designated work experience. Standard grading available according to procedures outlined in college catalog. Prerequisites: Permission of Department or Division. Cross-References: CON290AA.

**CNS290AB**  Lab 2 Credits 12 Periods
**Construction Internship**
Construction internship office/field experience with private/public agencies or citizen volunteer groups. One hundred and sixty (160) hours of designated work experience. Standard grading available according to procedures outlined in college catalog. Prerequisites: Permission of Department or Division. Cross-References: CON290AB.

**CNS290AC**  Lab 3 Credits 18 Periods
**Construction Internship**
Construction internship office/field experience with private/public agencies or citizen volunteer groups. Two hundred and forty (240) hours of designated work. Standard grading available according to procedures outlined in college catalog. Prerequisites: Permission of Department or Division. Cross-References: CON290AC.

**(CNT) CISCO NETWORKING TECHNOLOGY**

**CNT140AA**  Lec + Lab 4 Credits 6 Periods
**Introduction to Networks**
Introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced. Students will build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. Preparation for Cisco certification examination. Prerequisites: None.
Course Listings 2019-2020

CNT150AA        Lec + Lab  4 Credits  6 Periods
Cisco - Routing and Switching Essentials
Architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. Configuration and troubleshooting routers and switches and resolving common issues with RIPv1, RIPng, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. Preparation for Cisco certification examination. Prerequisites: A grade of C or better in CNT140AA or permission of Instructor.

CNT160AA        Lec + Lab  4 Credits  6 Periods
Scaling Networks
Architecture, components, and operations of routers and switches in large and complex networks. Configuring routers and switches for advanced functionality. Configuring and troubleshooting routers and switches and resolving common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks. Developing the knowledge and skills needed to implement a WLAN in a small-to-medium network. Preparation for Cisco certification examination. Prerequisites: A grade of C or better in CNT150AA or permission of Instructor.

CNT170AA        Lec + Lab  4 Credits  6 Periods
Cisco - Connecting Networks
Wide Area Network (WAN) technologies and network services required to converged applications in a complex network. Criteria selection of network devices and WAN technologies to meet network requirements. Configuring and troubleshooting network devices, and resolving common issues with data link protocols issues, and developing the knowledge and skills needed to implement Internet Protocol Security (IPSec) and Virtual Private Network (VPN) operations. Preparation for Cisco certification examination. Prerequisites: A grade of C or better in CNT160AA or permission of Instructor.

(COM) COMMUNICATION

COM100 Lecture  3 Credits  3 Periods
Introduction to Human Communication  SUN# COM1100
Introduces the theory and practice of human communication. Surveys communication topics related to interpersonal, small group, and public communication. Prerequisites: None.

COM110 Lecture  3 Credits  3 Periods
Interpersonal Communication  SUN# COM1110
Theory and practice of communication skills which affect day-to-day interactions with other persons. Topics may include using verbal and nonverbal symbols, interactive listening, resolving interpersonal conflicts, developing and maintaining personal and professional relationships. Prerequisites: None.

COM225 Lecture  3 Credits  3 Periods
Public Speaking
Designed to enhance the student's ability to present public speeches confidently and competently. Also designed to improve communication and critical thinking skills. Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.

COM230 Lecture  3 Credits  3 Periods
Small Group Communication  SUN# COM2271
Principles and processes of small groups and development of skills for participation and leadership in small group settings. Practice in problem solving, decision making, and information sharing. Prerequisites: None.

Course Listings 2019-2020

COM263 Lecture  3 Credits  3 Periods
Elements of Intercultural Communication
Diverse cultural contexts are explored through basic concepts, principles, and theories of intercultural communication. Discovering effective interaction and appropriate communication in a global community is emphasized. Prerequisites: None.

COM282AA Lab  1 Credit  1 Period
Service-Learning Experience in Communication
Unpaid Service-Learning (SL) experience, completed with approved community partner. COM282AA may be repeated for a total of six (6) credit hours. Standard grading available according to procedures outlined in catalog. Prerequisites: Permission of Instructor.

(CON) CONSTRUCTION

CON117 Lecture  2 Credits  2 Periods
Interpersonal Skills, Issues and Resolutions in Construction
Information about communication and human relations skills, the expectations of today's diverse workforce, and relationships with stakeholders. Leadership style, interview techniques, and professional development plans. Management skills in problem solving and negotiating. Prerequisites: None.

CON138 Lecture  1 Credit  1 Period
Introduction to Project Management and Resource Control
Technical and management skills such as preconstruction planning, cost and risk control and policy development. Criteria for project layout purchasing, subcontractor management, project layout. Preparation process for project start up, close out and alternate project delivery methods. Major factors which affect production control and production control standards. Project manager's role. Prerequisites: None. Cross Reference: IND138.

CON140 Lecture  1 Credit  1 Period
Construction Scheduling and Time Management
Fundamental training in scheduling, including listing and sequencing, bar charts, network diagrams and methods of managing resources. Importance of formal schedules, job planning, and establishing priorities and alternative scheduling methods. Prerequisites: None. Cross Reference: IND140.

CON181 Lecture  3 Credit  3 Period
Cost Estimating
Determining quantities of material, equipment, and labor for a construction project. Includes procedures used to apply unit costs to these items in a minimum of time. Occupational Safety and Health Administration Safety Standards and their impact on construction cost. Prerequisites: None.

CON244 Lecture  3 Credit  3 Period
Working Drawing Analysis: Blueprint Reading
Detailed analysis and interpretation of construction drawings (blueprint reading); interpretation of symbols, annotations, conventions, terms of trade; and understanding of drawing, dimensioning, plan organization, and specifications. Prerequisites: None.

CON252 Lecture  3 Credit  3 Period
Building Construction Methods, Materials, and Equipment
Comprehensive study of construction methods, materials, codes, and equipment used in building construction. Prerequisites: None.
CNP100A   Lecture 3 Credits 3 Periods
Cisco - Interoperable Communication
Introduces the theoretical and practical aspects of human communication. Surveys communication topics related to interpersonal, small group, and public communication. Prerequisites: None.

CNP110A   Lecture 3 Credits 3 Periods
Interpersonal Communication
SUN# CNP110A
Theory and practice of communication skills which affect face-to-face interactions with other persons. Topics may include using verbal and nonverbal symbols, interactive listening, resolving interpersonal conflict, developing and maintaining personal and professional relationships. Prerequisites: None.

CNP225A   Lecture 3 Credits 3 Periods
Public Speaking
SUN# CNP225A
Designed to enhance the student's ability to present public speeches confidently and competently. Also designed to improve information literacy and critical thinking skills. Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.

CNP230A   Lecture 3 Credits 3 Periods
Small Group Communication
SUN# CNP230A
Principles and processes of small groups and development of skills for participation and leadership in small group settings. Practice in problem solving, decision making, and information sharing. Prerequisites: None.
CON271 Lecture 3 Credit 3 Periods
Construction Safety
Overview of safety methods and procedures for accident prevention and equipment used by construction workers to maximize field safety during various phases of a construction project, including requirements and regulations for construction safety set by Occupational Safety and Health Administration (OSHA) standards along with biological aspects of construction safety. Prerequisites: None.

CON290AA Lab 1 Credit 6 Periods
Construction Internship
Construction internship office/field experience with private/public agencies or citizen volunteer groups. Eighty (80) hours of designated work experience. Prerequisites: COS290A may be repeated for a total of three (3) credits. Standard grading available according to procedures outlined in college catalog. Prerequisites: Permission of Department or Division. Cross-Reference: CNS290A.

CON290AB Lab 2 Credits 12 Periods
Construction Internship
Construction internship office/field experience with private/public agencies or citizen volunteer groups. One hundred and sixty (160) hours of designated work experience. Standard grading available according to procedures outlined in college catalog. Prerequisites: Permission of Department or Division. Cross-Reference: CNS290AB.

CON290AC Lab 3 Credits 18 Periods
Construction Internship
Construction internship office/field experience with private/public agencies or citizen volunteer groups. Two hundred and forty (240) hours of designated work experience. Standard grading available according to procedures outlined in college catalog. Prerequisites: Permission of Department or Division. Cross-Reference: CNS290AC.

(COR) CORE CRAFT SKILLS
COR101 80 Clock Hours
Core: Introduction to Craft Skills
This National Center for Construction Education and Research (NCCER) core curriculum is a prerequisite to all other level 1 craft curriculum. Its modules cover basic safety, communication skills, introduction to construction drawings and math, hand/power tools, employability skills, and material handling. Prerequisites: None.

(COS) COSMETOLOGY
COS112 400 Clock Hours
Hair Essentials
Introduction to the basic theory and procedures in cosmetology hair essentials. Prerequisites: Admission into the Cosmetologist program.

COS114 200 Clock Hours
Student Salon 1
Continuation of cosmetology theory and practical concepts at an intermediate level. Theory will be focusing on professional development, salon ecology, anatomy and hair decisions. Practical skills will be demonstrated daily on clients and manikins. Rubrics on procedures are done monthly. One day a month on Arizona state board licensure focus. Prerequisites: COS112 or Program Manager’s permission.
CON271  Lecture  3 Credit  3 Periods
Construction Safety
Overview of safety methods and procedures for accident prevention and equipment used by construction workers to maximize field safety during various phases of a construction project, including requirements and regulations for construction safety set by Occupational Safety and Health Administration (OSHA) standards along with biological aspects of construction safety. Prerequisites: None.

CON290AA  Lab  1 Credit  6 Periods
Construction Internship
Construction internship office/field experience with private/public agencies or citizen volunteer groups. Eighty (80) hours of designated work experience. CNS290AA may be repeated for a total of three (3) credits. Standard grading available according to procedures outlined in college catalog. Prerequisites: Permission of Department or Division. Cross-Reference: CNS290A.

CON290AB  Lab  2 Credits  12 Periods
Construction Internship
Construction internship office/field experience with private/public agencies or citizen volunteer groups. One hundred and sixty (160) hours of designated work experience. Standard grading available according to procedures outlined in college catalog. Prerequisites: Permission of Department or Division. Cross-Reference: CNS290AB.

CON290AC  Lab  3 Credits  18 Periods
Construction Internship
Construction internship office/field experience with private/public agencies or citizen volunteer groups. Two hundred and forty (240) hours of designated work. Standard grading available according to procedures outlined in college catalog. Prerequisites: Permission of Department or Division. Cross-Reference: CNS290AC.

(COR) CORE CRAFT SKILLS

COR101  80 Clock Hours
Core: Introduction to Craft Skills
This National Center for Construction Education and Research (NCCER) core curriculum is a prerequisite to all other level 1 craft curriculum. Its modules cover basic safety, communication skills, introduction to construction drawings and math, hand/power tools, employability skills, and material handling. Prerequisites: None.

(COS) COSMETOLOGY

COS116  200 Clock Hours
Student Salon 2
Apply concepts learned in the classroom and the student salon to develop real life scenarios while servicing a client and/or becoming a future business owner in the beauty industry. Prerequisites: COS114 or Program Manager's permission.

COS118  200 Clock Hours
Hair Stylist State Licensure Focus (Cosmetology program students only)
This course is designed to prepare students for the written and practical examinations for the Arizona State Board of Cosmetology HAIRSTYLIST licensure only. Prerequisites: COS116 or Program Manager's permission.

COS119  200 Clock Hours
Nail Essentials
Introduction to nail services in the beauty industry. Prerequisites: COS116 or Program Manager's permission.

COS121  200 Clock Hours
Skin Essentials
Introduction to skin services in the beauty industry. Prerequisites: COS119 or Program Manager's permission.

COS214  200 Clock Hours
Student Salon 4
Prepares cosmetology students to be industry ready and prepared to perform services in their chosen field of expertise after licensure with the Arizona State Board of Cosmetology. Prerequisites: COS212 or Program Manager's permission.

COS218  200 Clock Hours
Cosmetology State Licensure Focus (Cosmetology program students only)
This course is designed to prepare cosmetology students for the written and practical examinations for Arizona State Board of Cosmetology licensure. Prerequisites: COS214 or Program Manager's permission.

COS250  80 Clock Hours
Instructor in Training Orientation
Students will be introduced to the Arizona State Board of Cosmetology Instructor safety and sanitation, rules and regulations. This class is to prepare a student to become an Instructor in their licensed field. Prerequisites: Arizona State Board of Cosmetology licensure.

COS251  135 Clock Hours
Instructor in Training I
Students will train to become an Instructor in their certified field of cosmetology or aesthetics. Students will learn the fundamentals of becoming an Instructor by completing assigned work, shadowing Instructors, creating lesson plans, coaching students, and working hands-on with students and clients. Prerequisites: COS250.

COS252  135 Clock Hours
Instructor in Training II
Students will continue to train to become an Instructor in their certified field of cosmetology or aesthetics. Students will learn the fundamentals of becoming an Instructor by completing assigned work, shadowing Instructors, creating lesson plans, coaching students, and working hands-on with students and clients. State board preparation for licensing. Prerequisites: COS251.
(CPD) COUNSELING AND PERSONAL DEVELOPMENT

CPD104 Lecture 3 Credits 3 Periods
Career and Personal Development
An overview of the holistic process of career/life planning through self-awareness and understanding of the world of work. Exploration and application of behavioral, social, and cultural factors leading to college, career, and personal success with emphasis on assessment, applied behavior management, motivation, self-care, and career development. Prerequisites: None.

CPD115 Lecture 1 Credit 1 Period
Creating College Success
Strategies to create success in college. Methods for selecting and developing effective academic strategies, increasing self-awareness and developing management strategies. Elements of college resources and relationships with others explored in support of students’ educational experience. Prerequisites: None.

CPD150 Lecture 3 Credits 3 Periods
Strategies for College Success
Focus on increasing student success through college orientation and personal growth, study skills development, and educational and career planning. Prerequisites: None. Cross-Reference: AAA150.

CPD160 Lecture 3 Credits 3 Periods
Introduction to Multiculturalism
Examination of the multiple cultures and subcultures within the contemporary United States. Personal exploration of awareness and appreciation of multiculturalism. Activities for experiencing diverse cultural perspectives. Critical thinking skills for recognizing, analyzing, and mediating cultural and psychological factors impacting conflict and accord between diverse cultures through written and oral discourse. Prerequisites: A grade of C or better in ENG101, or ENG107, or permission of Instructor.

(CRE) CRITICAL READING

CRE101 3 Credits 3 Periods
College Critical Reading and Critical Thinking
Develop and apply critical thinking skills through critically reading varied and challenging materials. Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks. Prerequisites: A grade of C or better in ENG101 or ENG107 and (appropriate reading placement test score or a grade of C or better in RDG091 or RDG095 or RDG100 or RDG111 or RDG112 or RDG113 or permission of Instructor).

(CRP) CARPENTRY

CRP101 Lec + Lab 3 Credits 3 Periods
Orientation – Carpentry
Fundamental trade skills, employee-employer roles and responsibilities, and safe work practices needed for entry-level performance in the construction industry. Emphasis on attaining standard industry safety credentials, practical experience using construction terminology, math and basic measuring techniques. Training for job site hazard recognition, accident prevention, safe tool and equipment operation. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP102 Lec + Lab 3 Credits 3 Periods
Safety/Health Certifications for Carpentry
Awareness of construction hazard communication systems, fall protection, proper tool/equipment operation with an emphasis on individual responsibility for workplace safety and health in carpentry. Exposure to health emergency scenarios and proper selection, inspection, use, and operation of fall protection systems, tools, and powered lift truck equipment. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP102AD Lec + Lab 1 Credits 1.5 Periods
Concrete Formwork: Basic Wall Forms
Building a simple section of wall form using a standard whaler assembly; basic terminology pertaining to concrete wall form construction. Prerequisites: Registered Apprentice Status or permission of the Apprenticeship Coordinator.

CRP103 Lec + Lab 3 Credits 3 Periods
Tool and Equipment Applications
Selection and use of the proper tools/equipment for various construction applications including preparation of materials. Material calculations to minimize waste and increase productivity. Selection, inspection, use and operations of tools and aerial lifts and scaffold safety. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP104 Lec + Lab 3 Credits 3 Periods
Basic Wall Framing
Theory, methods, and procedures required to frame basic walls. Hands-on practice using proper tool techniques and appropriate materials. Introduction to print reading, basic wall layout, plating procedures, framing assembly and bracing. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP112 Lec + Lab 3 Credits 3 Periods
Print Reading for Carpenters
Introduction to print reading skills for carpenters. Developing ability to interpret two-dimensional views, standard drawing methods, pictorial elements, visual and verbal communication cues. Recognizing parts of drawings, locating building and insulation features, calculating dimensions, and using views to determine construction methods. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP122 Lec + Lab 3 Credits 3 Periods
Bridge Construction
Overview of basic bridge construction including exterior and interior girders, edge forms, bulkheads and hinge forms. Job-built and precast formwork methods, panel construction, assembly and hardware installation tasks. Review of related safety, math and print reading. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP123 Lec + Lab 3 Credits 3 Periods
Wall Forming
Skills and procedures for forming reinforced concrete walls using single and double waller systems. Characteristics and application of built-in-place, prefabricated and specialty forms, wall forming, calculating layout dimensions and estimating. Overview of panel forming reinforcement methods, material preparation and hardware installation. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.
### Course Listings 2019-2020

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<td>Lecture</td>
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### (CPD) COUNSELING AND PERSONAL DEVELOPMENT

#### CPD104 Lecture 3 Credits 3 Periods

**Career and Personal Development**

An overview of the holistic process of career/life planning through self-awareness and understanding of the world of work. Exploration and application of behavioral, social, and cultural factors leading to college, career, and personal success with emphasis on assessment, applied behavior management, motivation, self-care, and career development. Prerequisites: None.

#### CPD115 Lecture 1 Credit 1 Period

Creating College Success

Strategies to create success in college. Methods for selecting and developing effective academic strategies, increasing self-awareness and developing self-management strategies. Elements of college resources and relationships with others explored in support of students' educational experience. Prerequisites: None.

#### CPD120 Lecture 3 Credits 3 Periods

Introduction to Multiculturalism

Examination of the multiple cultures and subcultures within the contemporary United States. Personal exploration of awareness and appreciation of multiculturalism. Activities for experiencing diverse cultural perspectives. Critical thinking skills for recognizing, analyzing, and mediating cultural and psychological factors impacting conflict and accord between diverse cultures through written and oral discourse. Prerequisites: A grade of C or better in ENG101, or ENG107, or permission of Instructor.

### (CRE) CRITICAL READING

#### CRE101 3 Credits 3 Periods

College Critical Reading and Critical Thinking

Develop and apply critical thinking skills through critically reading varied and challenging materials. Includes analysis, evaluation, interpretation, and synthesis through at least two substantial writing and/or speaking tasks. Prerequisites: A grade of C or better in ENG101 or ENG107 and (appropriate reading placement test score or a grade of C or better in RDG091 or RDG095 or RDG100 or RDG111 or RDG112 or RDG113 or permission of Instructor).

### (CRP) CARPENTRY

#### CRP101 Lec + Lab 3 Credits 3 Periods

Fundamental trade skills, employee-employer roles and responsibilities, and safe work practices needed for entry-level performance in the construction industry. Emphasis on attaining standard industry safety credentials, practical experience using construction terminology, math and basic measuring techniques. Training for job site hazard recognition, accident prevention, safe tool and equipment operation. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.
CRP124  Lec + Lab  3 Credits  3 Periods
Foundations and Flatwork
Design and function of several types of foundations and concrete flatwork. Overview of methods, techniques and procedures for formwork layout, elevation, and construction including jobsite safety, print interpretation, material identification and basic use of builders’ level. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP214AB Lecture  2 Credits  2 Periods
Interior Systems: Ceilings and Clean Rooms

CRP231  Lec + Lab  3 Credits  3 Periods
Basic Roof Framing
Introduction to basic gable roof framing, terminology, characteristics and construction methods. Interpretation of print views and drawing elevations for job planning, rafter systems and layout details. Review of basic rise, run, rafter angles and length calculations. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP232  Lec + Lab  3 Credits  3 Periods
Stair and Ramp Forming
Methods, procedures and practices used to form stair and ramp structures including configuration and dimensions. Review of Stinger riser and stair thread calculations, state and federal building codes. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP233  Lec + Lab  3 Credits  3 Periods
Basic Metal Framing
Overview of residential metal framing theory and construction techniques. Interpretation of prints for job planning and estimation of materials. Layout and detail of wall plates, calculating principles, wall and roof assembly and installation techniques. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP234  Lec + Lab  3 Credits  3 Periods
Transit Level/Laser
Detailing, layout and construction of abutments used in the heavy highway industry. Overview of assembly components, key terms and abutment anatomy; footings; piers and retaining walls. Techniques for laying out keyway centerline and footing formwork construction. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP241  Lec + Lab  3 Credits  3 Periods
Gang Forms/Columns
Formwork types, applications and construction methods for gang and column forms using built and manufactured forming systems. Heavy timber gang forms and use of taper ties, bracing, and bulkhead tables. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP242  Lec + Lab  3 Credits  3 Periods
Doors/Door Hardware
Installation process for several types of security and exit door hardware. Print interpretation, codes, door schedules, symbols, and hardware recognition. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP243  Lec + Lab  3 Credits  3 Periods
Scaffold Erector Qualification
Safety and terminology related to scaffold built applications, elevated platform use, span and loading criteria, access and egress, stability, and structural connections and inspections. Project drawing review for locating dimensions, determining layout and scaffold material requirements. Erection/dismantling sequence for the development of job planning, preparation skills and applied math. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP244  Lec + Lab  3 Credits  3 Periods
Cabinet Installation
Cabinet installation from establishing the design layout to attaching countertops. Print interpretation, job planning, scoping techniques, and proper installation sequence. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.
CRP124  Lec + Lab  3 Credits  3 Periods
Foundations and Flatwork
Design and function of several types of foundations and concrete flatwork. Overview of methods, techniques and procedures for formwork layout, elevation, and construction including job site safety, print interpretation, material identification and basic use of builders’ level. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP214AB Lecture  2 Credits  2 Periods
Interior Systems: Ceilings and Clean Rooms

CRP231  Lec + Lab  3 Credits  3 Periods
Basic Roof Framing
Introduction to basic gable roof framing, terminology, characteristics and construction methods. Interpretation of print views and drawing elevations for job planning, rafter systems and layout details. Review of basic rise, run, rafter angles and length calculations. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP232  Lec + Lab  3 Credits  3 Periods
Stair and Ramp Forming
Methods, procedures and practices used to form stair and ramp structures including configuration and dimensions. Review of Stinger riser and stair thread calculations, state and federal building codes. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP233  Lec + Lab  3 Credits  3 Periods
Basic Metal Framing
Overview of residential metal framing theory and construction techniques. Interpretation of prints for job planning and estimation of materials. Layout and detail of wall plates, measuring techniques, wall and roof assembly and installation techniques. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP234  Lec + Lab  3 Credits  3 Periods
Transit Level/Laser
Detailing, layout and construction of abutments used in the heavy highway industry. Overview of assembly components, key terms and abutment anatomy; footings; piers and retaining walls. Techniques for laying out keyway centerline and footing formwork construction. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP241  Lec + Lab  3 Credits  3 Periods
Gang Forms/Columns
Formwork types, applications and construction methods for gang and column forms using built and manufactured forming systems. Heavy timber gang forms and use of taper ties, bracing, and bulkhead tables. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP242  Lec + Lab  3 Credits  3 Periods
Doors/Door Hardware
Installation process for several types of security and exit door hardware. Print interpretation, codes, door schedules, symbols, and hardware recognition. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP243  Lec + Lab  3 Credits  3 Periods
Scaffold Erector Qualification
Safety and terminology related to scaffold built applications, elevated platform use, span and loading criteria, access and egress, stability, and structural connections and inspections. Project drawing review for locating dimensions, determining layout and scaffold material requirements. Erection/dismantling sequence for the development of job planning, preparation skills and applied math. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CRP244  Lec + Lab  3 Credits  3 Periods
Cabinet Installation
Cabinet installation from establishing the design layout to attaching countertops. Print interpretation, job planning, scribbling techniques, and proper installation sequence. Prerequisites: Registered Apprentice status with the Central Arizona Carpenters Joint Apprenticeship Training Committee or permission of Apprenticeship Coordinator.

CTR101  Lec + Lab  6 Credits  10 Periods
Court Reporting: Machine Shorthand Theory Block I
Introduction of court briefs and phrases. Prerequisites: A grade of C or better in CTR101 or permission of Department or Division or Program Director.

CTR102  Lec + Lab  6 Credits  10 Periods
Court Reporting: Machine Shorthand Theory Block II
Introduction of court briefs and phrases. Prerequisites: A grade of C or better in CTR101 or permission of Department or Division or Program Director.

CTR105  Lec + Lab  1 Credit  1 Period
Court Reporting: Punctuation and Grammar
Application of the rules of punctuation, grammar, spelling, and capitalization to sentences, paragraphs, and transcripts through systematic testing and/or projects. Prerequisites: None.

CTR106  Lec + Lab  1 Credit  1 Period
Court Reporting: Legal Terminology
Civil/criminal law, the judicial system, legal terminologies, and researching legal citations. Prerequisites: None.

CTR107  Lec + Lab  1 Credit  1 Period
Court Reporting: Medical Terminology
Body systems and functions. Psychological and physical diseases and drugs. Methods of researching medical information. Prerequisites: None.

CTR197  Lab  1 Credit  5 Periods
Court Reporting Lab
Court reporting practice/transcription as assigned under supervision. Prerequisites: None. Corequisites: CTR101.
Course Listings 2019-2020

CTR209  Lec + Lab 3 Credits 5 Periods
Judicial Procedures for Court Reporting
Professional procedures, techniques, ethics, and introduction to video applications for judicial court reporters. Proper transcription methods and correct formatting styles for transcript production. Prerequisites: A grade of C or better in CTR102 or permission of Program Director.

CTR211  Lab 1 Credit 4 Periods
Judicial Internship
A minimum of 50 hours of participation in an actual courtroom deposition setting, Transcript production required. Prerequisites: A grade of C or better in CTR209 and student must pass an (1) 200 words per minute Q/A test with speed and accuracy to meet court reporting industry standards or permission of Program Director.

CTR215  Lec + Lab 3 Credits 3 Periods
Computer-Aided Transcription
Computer terminology, troubleshoot methods and basic maintenance of a computer-aided transcription (CAT) system. Real-time reporting system set-up, maintenance and operation. Real-time system applications in specific environments. Production of transcripts from dictation and with a computer-aided transcription system. Prerequisites: A grade of C or better in (BPC101AA and CTR101), or permission of Department or Division.

CTR251AA  Lec + Lab 4 Credits 4 Periods
Court Reporting Skill Building: Block III Literary Material
Development of speed and accuracy skills with dictation, readback, and transcription in literary material. Speed requirements of 80 and 100 words per minute (wpm) with a speed and accuracy to meet court reporting industry standards. Student must demonstrate completion of required speed in each module with a grade of C or better before enrolling in the next level. Prerequisites: A grade of C or better in CTR102 or permission of Program Director. Corequisites: (CTR251AB or CTR252AB or CTR253AB) and (CTR251AC or CTR252AC or CTR253AC).

CTR251AB  Lec + Lab 4 Credits 4 Periods
Court Reporting Skill Building: Block III Jury Charge Material
Development of speed and accuracy skills with dictation, readback, and transcription in jury charge material. Speed requirements of 100 and 120 words per minute (wpm) with speed and accuracy to meet court reporting industry standards. Student must demonstrate completion of required speed in each module with a grade of C or better before enrolling in the next level. Prerequisites: A grade of C or better in CTR102 or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AC or CTR252AC or CTR253AC).

CTR251AC  Lec + Lab 6 Credits 12 Periods
Court Reporting Skill Building: Block III Question/Answer Testimony Material
Development of speed and accuracy skills with dictation, readback, and transcription in question/answer material. Prerequisites: A grade of C or better in CTR251AA or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AC or CTR252AC or CTR253AC).

CTR252AA  Lec + Lab 4 Credits 4 Periods
Court Reporting Skill Building: Block IV Literary Material
Development of speed and accuracy skills with dictation, readback, and transcription in literary material. Speed requirements of 120 and 140 words per minute (wpm) with speed and accuracy to meet court reporting industry standards. Student must demonstrate completion of required speed in each module with a grade of C or better before enrolling in the next level. Prerequisites: A grade of C or better in CTR251AA or permission of Program Director. Corequisites: (CTR251AB or CTR252AB or CTR253AB) and (CTR251AC or CTR252AC or CTR253AC).

CTR252AB  Lec + Lab 4 Credits 4 Periods
Court Reporting Skill Building: Block IV Question/Answer Testimony Material
Development of speed and accuracy skills with dictation, readback, and transcription in question/answer material. Prerequisites: A grade of C or better in CTR251AB or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AB or CTR252AB or CTR253AB).

CTR252AC  Lec + Lab 6 Credits 12 Periods
Court Reporting Skill Building: Block IV Jury Charge Material
Development of speed and accuracy skills with dictation, readback, and transcription in jury charge material. Speed requirements of 200 and 225 words per minute (wpm) with speed and accuracy to meet court reporting industry standards. Prerequisites: A grade of C or better in CTR252AA or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AB or CTR252AB or CTR253AB).

CTR253AC  Lec + Lab 6 Credits 12 Periods
Court Reporting Skill Building: Block V Question/Answer Testimony Material
Development of speed and accuracy skills with dictation, readback, and transcription in question/answer material. Prerequisites: A grade of C or better in CTR252AB or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AC or CTR252AC or CTR253AC).

(DMI) DIAGNOSTIC MEDICAL IMAGING

DMI100  Lec + Lab 1 Credit 1 Period
Introduction to Diagnostic Medical Radiography: Professionalism and Patient Care
Preparation for entry into the medical field, with specific focus for diagnostic medical imaging. Role of health care worker in diagnostic imaging, job duties, responsibilities, working conditions and work environments in the inpatient and outpatient clinical settings. Theoretical and practical understanding of patient assessment and patient care. Medical ethics and the laws related to the healthcare worker in general and those in the diagnostic imaging environment. Prerequisites: Admission to the Medical Radiography program.
**Course Listings 2019-2020**

**CTR209  Lec + Lab 3 Credits 5 Periods**

**Judicial Procedures for Court Reporting**

Professional procedures, techniques, ethics, and introduction to video applications for judicial court reporters. Proper transcription methods and correct formatting styles for transcript production. Prerequisites: A grade of C or better in CTR102 or permission of Program Director.

**CTR211  Lab 1 Credit 4 Periods**

**Judicial Internship**

A minimum of 50 hours of participation in an actual courtroom deposition setting. Transcript production required. Prerequisites: A grade of C or better in CTR209 and student must pass one (1) 200 words per minute Q/A test with speed and accuracy to meet court reporting industry standards or permission of Program Director.

**CTR215  Lec + Lab 3 Credits 3 Periods**

**Computer-Aided Transcription**

Computer terminology, troubleshooting and basic maintenance of a computer-aided transcription (CAT) system. Real-time reporting system set-up, maintenance and operation. Real-time system applications in specific environments. Production of transcripts from dictation and with a computer-aided transcription system. Prerequisites: A grade of C or better in (BPC101AA and CTR101), or permission of Department or Division.

**CTR251AA  Lec + Lab 4 Credits 4 Periods**

**Court Reporting Skill Building: Block III Literary Material**

Development of speed and accuracy skills with dictation, readback, and transcription in literary material. Speed requirements of 80 and 100 words per minute (wpm) with speed and accuracy to meet court reporting industry standards. Student must demonstrate completion of required speed in each module with a grade of C or better before enrolling in the next level. Prerequisites: A grade of C or better in CTR102 or permission of Program Director. Corequisites: (CTR251AB or CTR252AB or CTR253AB) and (CTR251AC or CTR252AC or CTR253AC).

**CTR251AB  Lec + Lab 4 Credits 4 Periods**

**Court Reporting Skill Building: Block III Jury Charge Material**

Development of speed and accuracy skills with dictation, readback, and transcription in jury charge material. Speed requirements of 100 and 120 words per minute (wpm) with speed and accuracy to meet court reporting industry standards. Student must demonstrate completion of required speed in each module with a grade of C or better before enrolling in the next level. Prerequisites: A grade of C or better in CTR102 or permission of Program Director. Corequisites: (CTR251AB or CTR252AB or CTR253AB) and (CTR251AC or CTR252AC or CTR253AC).

**CTR251AC  Lec + Lab 6 Credits 12 Periods**

**Court Reporting Skill Building: Block III Question/Answer Testimony Material**

Development of speed and accuracy skills with dictation, readback, and transcription in question/answer material. Speed requirements of 80 and 100 words per minute (wpm) with speed and accuracy to meet court reporting industry standards. Student must demonstrate completion of required speed in each module with a grade of C or better before enrolling in the next level. Prerequisites: A grade of C or better in CTR102 or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AC or CTR252AC or CTR253AC).

**CTR252AA  Lec + Lab 4 Credits 4 Periods**

**Court Reporting Skill Building: Block IV Literary Material**

Development of speed and accuracy skills with dictation, readback, and transcription in literary material. Speed requirements of 120 and 140 words per minute (wpm) with speed and accuracy to meet court reporting industry standards. Student must demonstrate completion of required speed in each module with a grade of C or better before enrolling in the next level. Prerequisites: A grade of C or better in CTR251AA or permission of Program Director. Corequisites: (CTR251AB or CTR252AB or CTR253AB) and (CTR251AC or CTR252AC or CTR253AC).

**CTR252AB  Lec + Lab 4 Credits 4 Periods**

**Court Reporting Skill Building: Block IV Jury Charge Material**

Development of speed and accuracy skills with dictation, readback, and transcription in jury charge material. Speed requirements of 140 and 160 words per minute (wpm) with speed and accuracy to meet court reporting industry standards. Student must demonstrate completion of required speed in each module with a grade of C or better before enrolling in the next level. Prerequisites: A grade of C or better in CTR251AB or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AC or CTR252AC or CTR253AC).

**CTR252AC  Lec + Lab 6 Credits 12 Periods**

**Court Reporting Skill Building: Block IV Question/Answer Testimony Material**

Development of speed and accuracy skills with dictation, readback, and transcription in question/answer material. Speed requirements of 160 and 180 words per minute (wpm) with speed and accuracy to meet court reporting industry standards. Prerequisites: A grade of C or better in CTR252AA or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AB or CTR252AB or CTR253AB).

**CTR252AB  Lec + Lab 4 Credits 4 Periods**

**Court Reporting Skill Building: Block V Literary Material**

Development of speed and accuracy skills with dictation, readback and transcription in literary materials. Speed requirements 160 and 180 words per minute (wpm) with speed and accuracy to meet court reporting industry standards. Prerequisites: A grade of C or better in CTR252AA or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AC or CTR252AC or CTR253AC).

**CTR252AC  Lec + Lab 4 Credits 4 Periods**

**Court Reporting Skill Building: Block V Jury Charge Material**

Development of speed and accuracy skills with dictation, readback and transcription in jury charge materials. Speed requirements 180 and 200 words per minute (wpm) with speed and accuracy to meet court reporting industry standards. Prerequisites: A grade of C or better in CTR252AB or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AC or CTR252AC or CTR253AC).

**CTR252AC  Lec + Lab 4 Credits 4 Periods**

**Court Reporting Skill Building: Block V Question/Answer Testimony Material**

Development of speed and accuracy skills with dictation, readback, and transcription in question/answer material. Speed requirements 200 and 225 words per minute (wpm) with speed and accuracy to meet court reporting industry standards. Prerequisites: A grade of C or better in CTR252AC or permission of Program Director. Corequisites: (CTR251AA or CTR252AA or CTR253AA) and (CTR251AB or CTR252AB or CTR253AB).

**DMI100  Lec + Lab 1 Credit 1 Period**

**Introduction to Diagnostic Medical Radiography: Professionalism and Patient Care**

Preparation for entry into the medical field, with specific focus for diagnostic medical imaging. Role of health care worker in diagnostic imaging. Job duties, responsibilities, working conditions and work environments in the inpatient and outpatient clinical settings. Theoretical and practical understanding of patient assessment and patient care. Medical ethics and the laws related to the healthcare worker in general and those in the diagnostic imaging environment. Prerequisites: Admission to the Medical Radiography program.
<table>
<thead>
<tr>
<th>Course Listings 2019-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DM101</strong> Lecture 2 Credits 2 Periods</td>
</tr>
<tr>
<td>Radiation Safety</td>
</tr>
<tr>
<td>Sources and types of radiation. Units of radiation measurement. Conversions from traditional to system international units. Protection devices, operating equipment (including ancillary devices), and federal and state laws regarding radiation safety. Radiation monitoring devices. Prerequisites: Admission to the Medical Radiography program.</td>
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| **DM102** Lecture 3 Credits 3 Periods | **DM111** Lec 3 Credits Lec 2 Periods / Lab 0 Credits Lab 3 Periods |
| Radiographic Positioning I | Radiographic Positioning II |

| **DM102LL** Lab 1 Credit 3 Periods | **DM114** Lab 3 Credits 18 Periods |
| Radiographic Positioning I Laboratory | Radiography Practicum II |

| **DM103** Lec + Lab 1.5 Credits 2.5 Periods | **DM118** Lecture 2.5 Credits 2.5 Periods |
| Introduction to Imaging | Contrast Media Procedures |
| Complete instruction overview on imaging receptors, image processing and imaging systems. Discussion of image processing procedure that renders physical and chemical changes as a visible radiographic image. Prerequisites: Admission to the Medical Radiography program. | Terminology, gross and radiographic anatomy, procedures and image evaluation related to contrast media procedures. Type, nomenclature, administration, and adverse reaction and pharmacology related to contrast media. Preparation and dosages. Select topics related to surgical radiography. Unique positioning situations. Prerequisites: Admission to the Medical Radiography program. |

| **DM104** Lab 3.5 Credits 21.0 Periods | **DM124** Lab 3 Credits 18.6 Periods |
| Radiography Practicum I | Radiography Practicum III |
| Observation of and familiarization with hospital procedures and environment. Demonstration of appropriate patient care. Process examination requisitions and other documentation related to the procedure. Image acquisition, processing and storage. Operation and maintenance of radiographic equipment. Performance of basic radiographic procedures to include the chest, upper and lower limb. Prerequisites: Admission to the Medical Radiography program. | Reinforcement and broadening of routine and contrast media procedures, and portable skills acquired in earlier practicum with direct or indirect supervision as appropriate. Operation and maintenance of radiographic equipment. Correct use of radiation protection devices. Evaluation of radiographic images. Ethical and professional job-related skills. Prerequisites: Admission to the Medical Radiography program. |

| **DM105** Lecture 3 Credits 3 Periods | **DM1204** Lab 3 Credits 18 Periods |
| Fundamentals of Radiation Physics | Radiography Practicum IV |
| Fundamental principles of the physics involved in medical radiography. Simplified math, physical concepts of energy, the structure of matter, static electricity, electric current, and electromagnetism. Generators and motors, high-voltage control, and circuitry of the x-ray tube. Principles and characteristics of x-ray production. Prerequisites: Admission to the Medical Radiography Program or permission of Instructor. | Supervised student performance of routine radiological procedures, including surgery and portable procedures. Prerequisites: Admission to the Medical Radiography program. |

| **DM106** Lecture 1 Credit 1 Period | **DM1212** Lecture 1 Credit 1 Period |
| Radiographic Image Evaluation I | Advanced Radiographic Procedures |
| Systematic procedure for evaluating radiographic images to determine their diagnostic quality. Prerequisites: Admission to the Medical Radiography Program. | Physical space imaging equipment and sterile environment required for advanced and interventional radiographic procedures. Types and applications for needles, guide wires, and catheters. Advanced and interventional radiographic procedures. Prerequisites: Admission to the Medical Radiography program. |

| **DM107** Lec 4 Credits Lec 3 Periods / Lab 0 Credits Lab 3 Periods | |
| Principles of Digital Imaging | |
DMI101 Lecture  2 Credits  2 Periods
Radiation Safety
Sources and types of radiation. Units of radiation measurement. Conversions from traditional to system international units. Protection devices, operating equipment (including ancillary devices), and federal and state laws regarding radiation safety. Radiation monitoring devices. Prerequisites: Admission to the Medical Radiography program.

DMI102 Lecture  3 Credits  3 Periods
Radiographic Positioning I
Terminology, procedures, and anatomy pertinent to radiography. Routine radiographic positioning of chest, upper limb, and lower limb. Special projections of the chest, upper and lower limbs. Evaluation of radiographs of the chest, upper and lower limb. The impact of pathology on positioning and radiographic quality. Prerequisites: Admission to the Medical Radiography program.

DMI102LL Lab  1 Credit  3 Periods
Radiographic Positioning I Laboratory
Terminology, procedures, and anatomy pertinent to radiography. Routine radiographic positioning of chest, upper limb, and lower limb. Special projections of the chest, upper and lower limbs. Evaluation of radiographs of the chest, upper and lower limb. Prerequisites: Admission to the Medical Radiography program.

DMI103 Lec + Lab  1.5 Credits  2.5 Periods
Introduction to Imaging
Complete instruction overview on imaging receptors, image processing and imaging systems. Discussion of image processing procedure that renders physical and chemical changes as a visible radiographic image. Prerequisites: Admission to the Medical Radiography program.

DMI104 Lab  3.5 Credits  21.0 Periods
Radiography Practicum I
Observation of and familiarization with hospital procedures and environment. Demonstration of appropriate patient care. Process examination requisitions and other documentation related to the procedure. Image acquisition, processing and storage. Operation and maintenance of radiographic equipment. Performance of basic radiographic procedures to include the chest, upper and lower limb. Prerequisites: Admission to the Medical Radiography program.

DMI105 Lecture  3 Credits  3 Periods
Fundamentals of Radiation Physics
Fundamental principles of the physics involved in medical radiography. Simplified math, physical concepts of energy, the structure of matter, static electricity, electric current, and electromagnetism. Generators and motors, high-voltage control, and circuitry of the x-ray tube. Principles and characteristics of x-ray production. Prerequisites: Admission to the Medical Radiography Program or permission of Instructor.

DMI106 Lecture  1 Credit  1 Period
Radiographic Image Evaluation I
Systematic procedure for evaluating radiographic images to determine their diagnostic quality. Prerequisites: Admission to the Medical Radiography Program.

DMI107 Lec 4 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 3 Periods
Principles of Digital Imaging
Content imparts an understanding of the components, principles, and operation of digital imaging systems found in diagnostic radiology. Establishes a knowledge base in factors that govern the image production process. Lab activities provide opportunities to apply course concepts and experiment with various digital imaging systems. Prerequisites: Admission to the Medical Radiography program.

DMI108 Lecture  1 Credit  1 Period
Structured Diagnostic Medical Imaging Skills Enhancement
Structured diagnostic imaging cognitive learning and imaging study skills to help students achieve success in their respective imaging courses. Diagnostic medical imaging learning process and critical thinking application skills emphasized in coordination with the level of matriculation. Prerequisites: None. Corequisites: Enrolled in Diagnostic Medical Imaging program (Medical Radiography, Nuclear Medicine Technology, and Diagnostic Medical Ultrasound), or permission of Program Director. Cross-References: NUC108.

DMI112 Lec 3 Credits  Lec 2 Periods  /  Lab 0 Credits  Lab 3 Periods
Radiographic Positioning II
Radiographic anatomy of the upper and lower limb, pelvis and bones of the thorax. Positioning of the humerus, shoulder, pelvis, hip, and bones of the thorax. Radiographic anatomy of the vertebral column and cranial. Positioning of the vertebral column and cranial. Emphasis on radiation protection, image evaluation and modifications. Serving the culturally diverse patient. Prerequisites: Admission to the Medical Radiography program.

DMI114 Lab  3 Credits  18 Periods
Radiography Practicum II

DMI118 Lecture  2.5 Credits  2.5 Periods
Contrast Media Procedures
Terminology, gross and radiographic anatomy, procedures and image evaluation related to contrast media procedures. Type, nomenclature, administration, and adverse reaction and pharmacology related to contrast media. Preparation and dosages. Select topics related to surgical radiography. Unique positioning situations. Prerequisites: Admission to the Medical Radiography program.

DMI124 Lab  3 Credits  18.6 Periods
Radiography Practicum III
Reinforcement and broadening of routine and contrast media procedures, and portable skills acquired in earlier practicum with direct or indirect supervision as appropriate. Operation and maintenance of radiographic equipment. Correct use of radiation protection devices. Evaluation of radiographic images. Ethical and professional job-related skills. Prerequisites: Admission to the Medical Radiography program.

DMI204 Lab  3 Credits  18 Periods
Radiography Practicum IV
Supervised student performance of routine radiological procedures, including surgery and portable procedures. Prerequisites: Admission to the Medical Radiography program.

DMI212 Lecture  1 Credit  1 Period
Advanced Radiographic Procedures
Physical space imaging equipment and sterile environment required for advanced and interventional radiographic procedures. Types and applications for needles, guide wires, and catheters. Advanced and interventional radiographic procedures. Prerequisites: Admission to the Medical Radiography program.
Course Listings 2019-2020

DMI214 Lab 4.5 Credits 28.8 Periods
Radiography Practicum V

DMI215 Lecture 2 Credits 2 Periods
Radiation Biology
Provide an overview of the principles of the interaction of radiation with living systems. Radiation effects on molecules, cells, tissues and the body as a whole. Factors affecting biological response including acute and chronic effects of radiation. Radiation safety and health requirements of federal and state regulatory agencies, accreditation agencies and health care organizations. Prerequisites: Admission to the Medical Radiography program.

DMI216 Lecture 1 Credit 1 Period
Radiographic Image Evaluation II
Systematic procedure for evaluating radiographic images to determine their diagnostic quality. Prerequisites: Admission to the Medical Radiography program.

DMI220 Lecture 3 Credits 3 Periods
Sectional Anatomy
Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, chest, abdomen and pelvic cavity. Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, chest, abdomen and pelvic cavity. Prerequisites: A grade of C or better in BIO160 or BIO201 and (HCC145 or HCC146), or a graduate of a related medical program of study or currently registered as a technologist in radiography, nuclear medicine, radiation therapy or sonography OR Admission to the Medical Radiography program or permission of Instructor. Cross-References: DMS/ICE220.

DMI221 Lec 2.5 Credits Lec 2 Periods / Lab 0 Credits Lab 1.5 Periods
Advanced Digital Imaging
Equipment used in digital imaging, including image intensification, calculation of minification, brightness gain, viewing, and storage systems. Components and operating principles related to digital fluoroscopy. Principles, physics, and instrumentation related to digital radiography. Prerequisites: Admission to the Medical Radiography program.

DMI222 Lecture 1 Credit 1 Period
Advanced Radiologic Pathology
Application of terminology related to the disease process and the general principles of disease. Standard precautions - disease control measures to include education, asepsis, isolation, and communicability. Radiographic appearances of specific forms of pathology. Symptoms, prognosis, and diagnosis of specific forms of pathology. Prerequisites: Admission to the Medical Radiography program.

DMI223 Lecture 1 Credit 1 Period
Introduction to Computed Tomography
Overview of the principles and operation of computed tomography (CT) scanner. Content includes history, physics processes, instrumentation components, imaging acquisition, reconstruction and display for computed tomography imaging. Prerequisites: Admission to the Medical Radiography program. Cross-References: ICE223.

DMI224 Lab 5 Credits 30.6 Periods
Radiography Practicum VI
Reinforcement and broadening of all radiographic procedures, portable skills and surgical procedures performed in the clinical environment acquired in earlier practicum. Operation and maintenance of radiographic equipment. Correct use of radiation protection devices. Evaluation of radiographic images. Ethical and professional job-related skills. Prerequisites: Admission to the Medical Radiography program.
DMI214  Lab  4.5 Credits  28.8 Periods
Radiography Practicum V

DMI215  Lecture  2 Credits  2 Periods
Radiation Biology
Provide an overview of the principles of the interaction of radiation with living systems. Radiation effects on molecules, cells, tissues and the body as a whole. Factors affecting biological response including acute and chronic effects of radiation. Radiation health and safety requirements of federal and state regulatory agencies, accreditation agencies and health care organizations. Prerequisites: Admission to the Medical Radiography program.

DMI216  Lecture  1 Credit  1 Period
Radiographic Image Evaluation II
Systematic procedure for evaluating radiographic images to determine their diagnostic quality. Prerequisites: Admission to the Medical Radiography program.

DMI220  Lecture  3 Credits  3 Periods
Sectional Anatomy
Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, chest, abdomen and pelvic cavity. Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, chest, abdomen and pelvic cavity. Prerequisites: A grade of C or better in (BIO160 or BIO201) and (HCC145 or HCC146), or a graduate of a related medical program of study or currently registered as a technologist in radiography, nuclear medicine, radiation therapy or sonography OR Admission to the Medical Radiography program or permission of Instructor. Cross-References: DMI/ICE220.

DMI221  Lec  2.5 Credits  Lec  2 Periods / Lab  0 Credits  Lab  1.5 Periods
Advanced Digital Imaging
Equipment used in digital imaging, including image intensification, calculation of minification, brightness gain, viewing, and storage systems. Components and operating principles related to digital fluoroscopy. Principles, physics, and instrumentation related to digital radiography. Prerequisites: Admission to the Medical Radiography program.

DMI222  Lecture  1 Credit  1 Period
Advanced Radiologic Pathology
Application of terminology related to the disease process and the general principles of disease. Standard precautions - disease control measures to include education, asepsis, isolation, and communicability. Radiographic appearances of specific forms of pathology. Symptoms, prognosis, and diagnosis of specific forms of pathology. Prerequisites: Admission to the Medical Radiography program.

DMI223  Lecture  1 Credit  1 Period
Introduction to Computed Tomography
Overview of the principles and operation of computed tomography (CT) scanner. Content includes history, physics processes, instrumentation components, imaging acquisition, reconstruction and display for computed tomography imaging. Prerequisites: Admission to the Medical Radiography program. Cross-References: ICE223.

DMI224  Lab  5 Credits  30.6 Periods
Radiography Practicum VI
Reinforcement and broadening of all radiographic procedures, portable skills and surgical procedures performed in the clinical environment acquired in earlier practicum. Operation and maintenance of radiographic equipment. Correct use of radiation protection devices. Evaluation of radiographic images. Ethical and professional job-related skills. Prerequisites: Admission to the Medical Radiography program.

DMI226  Lecture  1 Credit  1 Period
Radiographic Image Evaluation III
Systematic procedure for evaluating radiographs to determine their diagnostic quality. Prerequisites: A grade of C or better in DMI216.

DMI227  Lecture  1 Credit  1 Period
Radiology Seminar
Use of skills and resources for reviewing content areas examined by the American Registry of Radiologic Technologists (ARRT). Professional job-seeking procedures and development of resume. Prerequisites: Admission to the Medical Radiography program.

DMI228  Lec + Lab  1 Credit  6 Periods
Radiography Practicum VII
Advanced imaging procedures. DMI228 may be repeated for a total of three (3) credit hours. Prerequisites: Permission of Instructor and acceptance by sponsoring clinical institution.

(DMS) DIAGNOSTIC MEDICAL SONOGRAPHY

DMS101  Lab  1 Credit  3 Periods
Patient Care in Diagnostic Sonography
Safety procedures for the hospitalized patient. Transfer, moving and positioning techniques. Patient assessment methods and procedures. Protection of drains, tubes, intravenous lines, and infusion pumps. Gowning, gowning, and sterile procedures. Safe use and application of sonography equipment. Professional behavior and responsibility of the sonographer in the diagnostic imaging lab. Prerequisites: None.

DMS110  Lecture  1 Credit  1 Period
Introduction to Diagnostic Sonography
Use of ultrasound including medical applications. Job description including opportunities, licensure, use of sonography equipment, responsibilities of Diagnostic Medical Sonographers in the workplace, and medical ethics. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS120  Lecture  3 Credits  3 Periods
Ultrasound Imaging: Abdominal Procedures I
Ultrasound evaluation of upper abdominal organs. Normal and pathologic ultrasound appearances of the liver, gallbladder, pancreas, biliary tree, spleen, adrenal glands, kidneys, major vascular structures, and lymph nodes. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS120LL  Lab  1 Credit  3 Periods
Ultrasound Imaging: Abdominal Procedures I Laboratory
Ultrasound evaluation of upper abdominal organs. Normal ultrasound appearances of the liver, gallbladder, pancreas, biliary tree, spleen, adrenal glands, kidneys, major vascular structures, small parts, and lymph nodes. Prerequisites or Corequisites: DMS120.

DMS121  Lecture  3 Credits  3 Periods
Ultrasound Imaging: Abdominal Procedures II
Ultrasound evaluation of upper abdominal organs. Normal and pathologic ultrasound appearances of the liver, gallbladder, pancreas, biliary tree, spleen, adrenal glands, kidneys, major vascular structures, lymph nodes, and small parts. Prerequisites: Admission to Diagnostic Medical Sonography program.
DMS130 Lecture 4 Credits 4 Periods
Ultrasonic Imaging: OB/GYN Procedures
Ultrasonic evaluation of the female pelvis, reproductive system, and fetus. Diagnostic tests related to the ultrasound procedure. Normal and pathologic ultrasonic appearances of the fetus, placenta, uterus, cervix, fallopian tubes, and ovaries. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS140 Lecture 2 Credits 2 Periods
Ultrasonic Case Studies: Part I
Medical terminology, anatomy, physical principles, and techniques for determining proper technical factors. Anatomical variants, normal, and pathological sonographic findings in diagnostic ultrasound case presentations. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS145 Lecture 1 Credit 1 Period
Clinical Pathology for Diagnostic Imaging
Disease etiology and impact on the human body. Physiologic effects of disease on body systems. Role of Diagnostic Medical Imaging (DMI) modalities in the diagnosis and treatment of selected disease processes. DMI as part of the health care team. Cultural implications in the prevention and treatment of disease. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS150 Lecture 2 Credits 2 Periods
Sonographic Principles and Instrumentation I
Sonographic principles and instrumentation necessary for the performance of diagnostic sonographic examinations. Quality control materials and procedures. Biological effects of ultrasound energy. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS150LL Lab 1 Credit 3 Periods
Sonographic Principles and Instrumentation Laboratory
Laboratory experience in support of DMS150. Prerequisites or Corequisites: DMS150.

DMS151 Lecture 2 Credits 2 Periods
Sonographic Principles and Instrumentation II
Sonographic principles and instrumentation necessary for the performance of diagnostic sonographic examinations using hemodynamics and Doppler imaging. Identifying and reducing image artifacts. Quality control materials and procedures. Biological effects of ultrasound energy. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS155 Lab 1 Credit 5 Periods
Clinical Practicum I
Observation of correct hospital policies and procedures in the clinical setting. Health delivery systems to include private, for profit, not-for-profit, and government. The job description, duties, and functions of the sonographer. Career opportunities in ultrasound. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS161 Lab 1 Credit 5 Periods
Clinical Practicum II-AA
Technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the beginner level. Hospital procedures and policies. Observation, assistance, and performance of, clerical, patient care, and sonographic duties under strict supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS162 Lab 2 Credits 10 Periods
Clinical Practicum II-AB
Development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the beginner level. Hospital procedures and policies. Continued observation, assistance and performance of clerical, patient care and sonographic duties under strict supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS171 Lab 2 Credits 10 Periods
Clinical Practicum III-AA
Technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the advanced beginner level. Reinforcement and broadening of knowledge base related to hospital procedures and policies. Observation, assistance and performance of patient care and sonographic duties under moderate supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS172 Lab 2 Credits 10 Periods
Clinical Practicum III-AB
Continued technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the advanced beginner level. Ongoing reinforcement and broadening of knowledge base related to hospital procedures and policies. Continued observation, assistance and performance of patient care and sonographic duties under moderate supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS210 Lecture 2 Credits 2 Periods
Concepts of Vascular Imaging
Vascular physics and terminology. Application of imaging concepts to arterial, venous, and cerebrovascular ultrasound. Normal, abnormal and pathologic states of human vascular anatomy. Review and demonstration of selected scanning protocols to include extremity and cerebral vascular systems. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS210LL Lab 1 Credit 3 Periods
Concepts of Vascular Imaging Laboratory
Application of diagnostic concepts to arterial, venous, and cerebrovascular vasculature. Normal human vascular anatomy. Demonstration of selected scanning protocols to include extremity and visceral vascular systems. Prerequisites or Corequisites: DMS210.

DMS220 Lecture 3 Credits 3 Periods
Sectional Anatomy
Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, chest, abdomen and pelvic cavity. DMS220 Requisites: Prerequisites: Admission to the Medical Radiography program or permission of Instructor. Prerequisites: A grade of C or better in (BIO160 or BIO201) and (HCC145 or HCC146), or a graduate of a related medical program of study or currently registered as a technologist in radiography, nuclear medicine, radiation therapy or sonography. Cross-References: DMI/ICE220.

DMS225 Lecture 1 Credit 1 Period
High Risk Obstetric/Gynecology Sonography
Sonographic overview of the female reproductive system. High risk intervention and tests related to sonography. Normal and abnormal sonographic presentations of the uterus and fetus in pregnancy. Prerequisites: Admission to Diagnostic Medical Sonography program.
Course Listings 2019-2020

**DMS130 Lecture 4 Credits 4 Periods**  
Ultrasound Imaging: OB/GYN Procedures  
Ultrasound evaluation of the female pelvis, reproductive system, and fetus. Diagnostic tests related to the ultrasound procedure. Normal and pathological ultrasound appearances of the fetus, placenta, uterus, cervix, fallopian tubes, and ovaries. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS140 Lecture 2 Credits 2 Periods**  
Ultrasound Case Studies: Part I  
Medical terminology, anatomy, physical principles, and techniques for determining proper technical factors. Anatomical variants, normal, and pathological sono-finding in diagnostic ultrasound case presentations. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS145 Lecture 1 Credit 1 Period**  
Clinical Pathology for Diagnostic Imaging  
Disease etiology and impact on the human body. Physiologic effects of disease on body systems. Role of Diagnostic Medical Imaging (DMI) modalities in the diagnosis and treatment of selected disease processes. DMI as part of the health care team. Cultural implications in the prevention and treatment of disease. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS150 Lecture 2 Credits 2 Periods**  
Sonographic Principles and Instrumentation I  
Sonographic principles and instrumentation necessary for the performance of diagnostic sono-graphic examinations. Quality control materials and procedures. Biological effects of ultrasound energy. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS150LL Lab 1 Credit 3 Periods**  
Sonographic Principles and Instrumentation Laboratory  
Laboratory experience in support of DMS150. Prerequisites or Corequisites: DMS150.

**DMS151 Lecture 2 Credits 2 Periods**  
Sonographic Principles and Instrumentation II  
Sonographic principles and instrumentation necessary for the performance of diagnostic sono-graphic examinations using hemodynamics and Doppler imaging. Identifying and reducing image artifacts. Quality control materials and procedures. Biological effects of ultrasound energy. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS155 Lab 1 Credit 5 Periods**  
Clinical Practicum I  
Observation of correct hospital policies and procedures in the clinical setting. Health delivery systems to include private, for profit, not-for-profit, and government. The job description, duties, and functions of the sonographer. Career opportunities in ultrasound. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS161 Lab 1 Credit 5 Periods**  
Clinical Practicum II-AA  
Technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the beginner level. Hospital procedures and policies. Observation, assistance, and performance of, clerical, patient care, and sono-graphic duties under strict supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS162 Lab 2 Credits 10 Periods**  
Clinical Practicum II-AB  
Development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the beginner level. Hospital procedures and policies. Continued observation, assistance and performance of clerical, patient care and sono-graphic duties under strict supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS163 Lab 3 Credits 15 Periods**  
Clinical Practicum II-AC  
Continued development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the beginner level. Hospital procedures and policies. Ongoing observation, assistance, and performance of clerical, patient care, and sono-graphic duties under strict supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS171 Lab 2 Credits 10 Periods**  
Clinical Practicum III-AA  
Technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the advanced beginner level. Reinforcement and broadening of knowledge base related to hospital procedures and policies. Observation, assistance and performance of patient care and sono-graphic duties under moderate supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS172 Lab 2 Credits 10 Periods**  
Clinical Practicum III-AB  
Continued technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the advanced beginner level. Ongoing reinforcement and broadening of knowledge base related to hospital procedures and policies. Continued observation, assistance and performance of patient care and sono-graphic duties under moderate supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS210 Lecture 2 Credits 2 Periods**  
Concepts of Vascular Imaging  
Vascular physics and terminology. Application of imaging concepts to arterial, venous, and cerebrovascular ultrasound. Normal, abnormal and pathologic states of human vascular anatomy. Review and demonstration of selected scanning protocols to include extremity and cerebral vascular systems. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS210LL Lab 1 Credit 3 Periods**  
Concepts of Vascular Imaging Laboratory  
Application of diagnostic concepts to arterial, venous, and cerebrovascular vasculature. Normal human vascular anatomy. Demonstration of selected scanning protocols to include extremity and visceral vascular systems. Prerequisites or Corequisites: DMS210.

**DMS220 Lecture 3 Credits 3 Periods**  
Sectional Anatomy  
Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, chest, abdomen and pelvic cavity. DMS220 Requisites: Prerequisites: Admission to the Medical Radiography program or permission of Instructor. Prerequisites: A grade of C or better in (BIO160 or BIO201) and (HCC145 or HCC146), or a graduate of a related medical program of study or currently registered as a technologist in radiography, nuclear medicine, radiation therapy or sonography. Cross-References: DMI/ICE220.

**DMS225 Lecture 1 Credit 1 Period**  
High Risk Obstetric/Gynecology Sonography  
Sonographic overview of the female reproductive system. High risk intervention and tests related to sono-graphy. Normal and abnormal sono-graphic presentations of the uterus and fetus in pregnancy. Prerequisites: Admission to Diagnostic Medical Sonography program.
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<th>Type</th>
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<tr>
<td>DMS235</td>
<td>Lecture</td>
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<tr>
<td>Ultrasound Breast Imaging</td>
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<tr>
<td>Ultrasound imaging of the breast. Includes terminology, technique, physics, and instrumentation. Breast anatomy, physical examination and procedure findings. Pathology and correlation with other imaging modalities. Prerequisites: Admission to Diagnostic Medical Sonography program.</td>
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<tr>
<td>DMS240</td>
<td>Lecture</td>
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<tr>
<td>Ultrasound Case Studies: Part II</td>
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<tr>
<td>Medical terminology, anatomy, physical principles, and technology for determining proper technical factors. Anatomical variants, normal, and pathological sonographic findings in diagnostic ultrasound case presentations. Prerequisites: Admission to Diagnostic Medical Sonography program.</td>
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<tr>
<td>DMS241</td>
<td>Lecture</td>
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<tr>
<td>Ultrasound Case Studies: Part III</td>
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<tr>
<td>Medical terminology, anatomy, physical principles, and technology for determining proper technical factors. Prerequisites: Admission to Diagnostic Medical Sonography program.</td>
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<tr>
<td>DMS245</td>
<td>Lecture</td>
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<tr>
<td>Neurosonography</td>
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<tr>
<td>Neuroanatomy and neurosonography of the brain and spinal cord. Prerequisites: Admission to Diagnostic Medical Sonography program.</td>
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<tr>
<td>DMS250</td>
<td>Lecture + Lab</td>
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<td>2</td>
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<tr>
<td>Musculoskeletal Sonography and Small Parts</td>
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<tr>
<td>Normal sonographic human anatomy in sagittal, transverse, oblique, coronal planes. Emphasis on musculoskeletal imaging and small parts. Prerequisites: Admission to Diagnostic Medical Sonography program.</td>
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<tr>
<td>DMS255</td>
<td>Lecture</td>
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<tr>
<td>Pediatric Sonography</td>
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<tr>
<td>Ultrasound imaging of the pediatric population. Includes terminology, technique, physics and instrumentation. Embryology, anatomy, physical examination and procedure findings. Pathology and correlation with other imaging modalities. Prerequisites: Admission to Diagnostic Medical Sonography program, or Registered Diagnostic Medical Sonographer (RDMS) credentialed and permission of Program Director.</td>
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<tr>
<td>DMS261</td>
<td>Lab</td>
<td>2</td>
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<tr>
<td>Clinical Practicum IV-AA</td>
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<tr>
<td>Technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the intermediate level. Reinforcement and broadening of knowledge base related to hospital procedures and policies. Observation, assistance and performance of patient care and sonographic duties under limited supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.</td>
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<tr>
<td>DMS262</td>
<td>Lab</td>
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<tr>
<td>Clinical Practicum IV-AB</td>
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<tr>
<td>Development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the intermediate level. Reinforcement and broadening of knowledge base related to hospital procedures and policies. Observation, assistance and performance of patient care and sonographic duties under limited supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.</td>
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<tr>
<td>DMS263</td>
<td>Lab</td>
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<tr>
<td>Vascular Clinical Practicum I</td>
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<tr>
<td>Technical and professional aspects of diagnostic vascular ultrasound in a hospital or clinical setting at the intermediate level. Reinforcement and broadening of knowledge base related to hospital procedures and policies. Observation, assistance and performance of patient care and vascular sonographic duties under limited supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.</td>
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<tr>
<td>DMS270</td>
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<tr>
<td>Clinical Practicum V-AA</td>
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<tr>
<td>Technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the advanced level. Continued opportunity for clinical diagnostic experiences in routine/high risk obstetrics, pelvic, vascular, abdominal and small parts scanning. Focus on progression to independent level of function. Prerequisites: Admission to Diagnostic Medical Sonography program.</td>
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<tr>
<td>DMS271</td>
<td>Lab</td>
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<tr>
<td>Clinical Practicum V-AB</td>
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<tr>
<td>Development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the advanced level. Continued opportunity for clinical diagnostic experiences in routine/high risk obstetrics, pelvic, vascular, abdominal and small parts scanning. Focus on progression to independent level of function. Prerequisites: Admission to Diagnostic Medical Sonography program.</td>
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<tr>
<td>DMS272</td>
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<tr>
<td>Clinical Practicum V-AC</td>
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<tr>
<td>Culminating clinical practice course with application of theoretical and practical concepts related to diagnostic ultrasound. Emphasis on independent performance of all diagnostic procedures including routine/high risk obstetrics, pelvic, vascular, abdominal and small parts scanning. Prerequisites: Admission to Diagnostic Medical Sonography program.</td>
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<td>DMS281</td>
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<td>Ultrasound Registry Preparation Seminar: Physics and Instrumentation</td>
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<tr>
<td>Intensive review of major content measured in the American Registry for Diagnostic Medical Sonography certification examination. Physics and instrumentation in ultrasound technology. Prerequisites: None.</td>
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<tr>
<td>DMS282</td>
<td>Lecture</td>
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<tr>
<td>Ultrasound Registry Preparation Seminar: Abdominal and Small Parts Imaging</td>
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<tr>
<td>Intensive review of major content measured in the American Registry for Diagnostic Medical Sonography certification examination. Specialties of abdominal and small parts imaging. Prerequisites: None.</td>
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<tr>
<td>DMS283</td>
<td>Lecture</td>
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<tr>
<td>Ultrasound Registry Preparation Seminar: Obstetrics, Gynecology, and Neonate</td>
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<tr>
<td>Intensive review of major content measured in the American Registry for Diagnostic Medical Sonography certification examination. Specialties of obstetrics, gynecology, and neonate imaging. Prerequisites: None.</td>
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<tr>
<td>DMS284</td>
<td>Lecture</td>
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<tr>
<td>Ultrasound Registry Preparation: Vascular Imaging</td>
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<tr>
<td>Anatomy and physiology of the vascular system. Testing parameters and methods for vascular examinations. Scan protocol for sonographic evaluation of head and neck, extremities, upper abdomen and pelvis vasculature. Interpret scans and special cases. Prerequisites: None.</td>
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</table>
Course Listings 2019-2020

DMS235 Lecture 1 Credit 1 Period
Ultrasound Breast Imaging
Ultrasound imaging of the breast. Includes terminology, technique, physics and instrumentation. Breast anatomy, physical examination and procedure findings. Pathology and correlation with other imaging modalities. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS240 Lecture 2 Credits 2 Periods
Ultrasound Case Studies: Part II
Medical terminology, anatomy, physical principles, and technology for determining proper technical factors. Anatomical variants, normal, and pathological sonoigraphic findings in diagnostic ultrasonic case presentations. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS241 Lecture 2 Credits 2 Periods
Ultrasound Case Studies: Part III
Medical terminology, anatomy, physical principles, and technology for determining proper technical factors. Anatomical variants, normal, and pathological sonoigraphic findings in diagnostic ultrasonic case presentations. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS245 Lecture 1 Credit 1 Period
Neurosonography
Neuroanatomy and neurosonography of the brain and spinal cord. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS250 Lec + Lab 2 Credits 2 Periods
Musculoskeletal Sonography and Small Parts
Normal sonographic human anatomy in sagittal, transverse, oblique, coronal planes. Emphasis on musculoskeletal imaging and small parts. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS255 Lecture 3 Credits 3 Periods
Pediatric Sonography
Ultrasound imaging of the pediatric population. Includes terminology, technique, physics and instrumentation. Embryology, anatomy, physical examination and procedure findings. Pathology and correlation with other imaging modalities. Prerequisites: Admission to Diagnostic Medical Sonography program, or Registered Diagnostic Medical Sonographer (RDMS) credentialed and permission of Program Director.

DMS261 Lab 2 Credits 10 Periods
Clinical Practicum IV-AA
Technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the intermediate level. Reinforcement and broadening of knowledge base related to hospital procedures and policies. Observation, assistance and performance of patient care and sonographic duties under limited supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS262 Lab 3 Credits 15 Periods
Clinical Practicum IV-AB
Development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the intermediate level. Ongoing reinforcement and broadening of knowledge base related to hospital procedures and policies. Observation, assistance and performance of patient care and sonographic duties under limited supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS263 Lab 2 Credits 10 Periods
Vascular Clinical Practicum I
Technical and professional aspects of diagnostic vascular ultrasound in a hospital or clinical setting at the intermediate level. Reinforcement and broadening of knowledge base related to hospital procedures and policies. Observation, assistance and performance of patient care and vascular sonoigraphic duties under limited supervision. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS270 Lab 1 Credit 5 Periods
Clinical Practicum V-AA
Technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the advanced level. Clinical diagnostic experiences in routine/high risk obstetrics, pelvic, vascular, abdominal and small parts scanning. Prerequisites: Admission to Diagnostic Medical Sonography program.

DMS271 Lab 2 Credits 10 Periods
Clinical Practicum V-AB
Development of technical and professional aspects of diagnostic ultrasound in a hospital or clinical setting at the advanced level. Continued opportunity for clinical diagnostic experiences in routine/high risk obstetrics, pelvic, vascular, abdominal and small parts scanning. Focus on progression to independent level of function. Prerequisites: Admission to Diagnostic Medical Sonography program.
**EDU222** Lecture 3 Credits 3 Periods
Intermediate Vascular Technology
Sonographic evaluation of the upper and lower peripheral vascular system and the cerebrovascular system. Normal and pathologic sonographic imaging and Doppler evaluation of the venous, arterial systems of the upper and lower extremities, and intra and extracranial vessels. Prerequisites: Admission to Diagnostic Medical Sonography program.

**EDU226** Lecture 2 Credits 2 Periods
Advanced Vascular Technology
Vascular evaluation of the abdominal viscera and small parts. Normal and pathologic sonographic imaging and Doppler evaluation of the venous and arterial systems of the abdominal organs and small body parts. Capabilities, limitations, protocols and techniques required for diagnosis of the systemic, hepatopetal, and collateral systems, and extremities. Perioperative mapping of the radial, mammary, and epigastric arteries. Prerequisites: Admission to Diagnostic Medical Sonography program.

**DMS286** Lecture 2 Credits 2 Periods
Advanced Vascular Technology Laboratory
Laboratory experience in support of DMS286. Prerequisites or Corequisites: DMS286.

**ECN211** Lecture 3 Credits 3 Periods
Macroeconomic Principles
A descriptive analysis of the structure and function of the American economy. Emphasis on basic economic institutions and factors that determine national income and employment levels. Consideration is given to the macroeconomic topics of national income, unemployment, inflation and monetary and fiscal policies. Prerequisites: None.

**ECN212** Lecture 3 Credits 3 Periods
Microeconomic Principles
Microeconomic analysis including the theory of consumer choice, price determination, resource allocation and income distribution. Includes non-competitive market structures such as monopoly and oligopoly, and the effects of government regulation. Prerequisites: None.

**EDU221** Lecture 3 Credits 3 Periods
Introduction to Education
Overview of the historical, political, economic, social, and philosophical factors that influence education and make it so complex. Opportunity for students to assess their interest and suitability for teaching. EDU221 requires a minimum of 30 hours of field experience in elementary or secondary classroom environment. Prerequisites: None.

**EDU222** Lecture 3 Credits 3 Periods
Introduction to the Exceptional Learner
Overview of the exceptional learner with emphasis on factors relating to current practices, identification, characteristics, and educational adaptations. Issues related to mild disabilities, severe disabilities, emotional and behavioral disorders, intellectual disabilities, and students who are gifted. EDU222 requires an approved field experience. Prerequisites: None.

**EDU230** Lecture 3 Credits 3 Periods
Cultural Diversity in Education
Examination of the relationship of cultural values to the formation of self-concept and learning styles. Examination of the role of prejudice, stereotyping and cultural incompatibilities in education. Emphasis on teacher preparation (pre-service and/or in-service) to offer an equal educational opportunity to students of all cultural groups. Prerequisites: None.

**EDU250** Lecture 3 Credits 3 Periods
Teaching and Learning in the Community College
The history, functions, organization and current issues in the community/junior college with emphasis on the Arizona community colleges. Includes focus on the design and practice of effective community college teaching and learning with special emphasis on the Maricopa County Community College District. Prerequisites: None.

**EDU291** Lecture 3 Credits 3 Periods
Children's Literature
Review of folk and modern literature from a variety of world cultures, including application of literary criteria to folk and modern literature for children. Prerequisites: None. Cross-References: ENH291.

**EEG130** Lecture 4 Credits 4 Periods
Introduction to EEG
Introduction to EEG (electroneurodiagnostic) theory, with emphasis on instrumentation, testing protocol and major disorders for which EEG is diagnostically useful. Introduction and hands-on experience with the 10/20 International Electrode Application System. Prerequisites: Admission to the Electroneurodiagnostic Technology program or Polysomnographic Technology program.

**EEG115** Lecture 2 Credits 2 Periods
Biomedical Electronic Technology I
Review of basic principles of math and physics as applied to biomedical electronic technology and monitoring applications within the fields of electroneurodiagnostic technology and polysomnography technology. Prerequisites: Admission to the Electroneurodiagnostic Technology program or Polysomnographic Technology program.

**EEG116** Lecture 3 Credits 3 Periods
Biomedical Electronic Technology II
Electronic concepts, electrical connections including grounding, and electrical and patient safety as applied to medical electronic technology and monitoring applications within the fields of electroneurodiagnostic technology and polysomnography technology. Prerequisites: Admission to the Electroneurodiagnostic Technology program or the Polysomnographic Technology program.

**EEG140** Lecture 1 Credit 1 Period
Basic Electroneurodiagnostic Skills
Theory and clinical procedures germane to the Electroneurodiagnostic (EEG) Department. Stress on hospital orientation, job competency, professional growth, and interpersonal communications with staff and patients. Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: EEG140LL.

**EEG140LL** Lab 1 Credit 3 Periods
Basic Electroneurodiagnostic Skills Laboratory
Practical application and clinical procedures germane to the Electroneurodiagnostic (EEG) Department. Stress on hospital orientation, job competency, professional growth, and interpersonal communications with staff and patients. Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: EEG140.
Course Listings 2019-2020

**Intelligent Vascular Technology**  
Sonographic evaluation of the upper and lower extremities and the cerebrovascular system. Normal and pathological sonographic imaging and Doppler evaluation of the venous, arterial systems of the upper and lower extremities, and intra and extracranial vessels. Prerequisites: Admission to Diagnostic Medical Sonography program.

**Advanced Vascular Technology**  
Vascular evaluation of the abdominal viscera and small parts. Normal and pathological sonographic imaging and Doppler evaluation of the venous and arterial systems of the abdominal organs and small body parts. Capabilities, limitations, protocols and techniques required for diagnosis of the systemic, hepatopetal, and collateral systems, and extremities. Perioperative mapping of the radial, mammary, and epigastric arteries. Prerequisites: Admission to Diagnostic Medical Sonography program.

**Advanced Vascular Technology Laboratory**  
Laboratory experience in support of DMS286. Prerequisites or Corequisites: DMS286.

**Microeconomic Principles**  
A descriptive analysis of the structure and function of the American economy. Emphasis on basic economic institutions and factors that determine national income and employment levels. Consideration is given to the macroeconomic topics of national income, unemployment, inflation and monetary and fiscal policies. Prerequisites: None.

**Biomedical Electronic Technology I**  
Review of basic principles of math and physics as applied to biomedical electronic technology and monitoring applications within the fields of electrophysiologic technology and polysomnography technology. Prerequisites: Admission to the Electrophysiologic Technology program or Polysomnographic Technology program.

**Biomedical Electronic Technology II**  
Electronic concepts, electrical connections including grounding, and electrical and patient safety as applied to medical electronic technology and monitoring applications within the fields of electrophysiologic technology and polysomnography technology. Prerequisites: Admission to the Electrophysiologic Technology program or Polysomnographic Technology program.

**Introduction to EEG**  
Introduction to EEG (electrophysiologic) theory, with emphasis on instrumentation, testing protocol and major disorders for which EEG is diagnostically useful. Introduction and hands-on experience with the 10/20 International Electrode Application System. Prerequisites: Admission to the Electrophysiologic Technology program or Polysomnographic Technology program.

**Basic Electrophysiologic Skills**  
Theory and clinical procedures germane to the Electrophysiologic (EEG) Department. Stress on hospital orientation, job competency, professional growth, and interpersonal communications with staff and patients. Prerequisites: Admission to the Electrophysiologic (END) Technology program. Corequisites: EEG140LL.

**Basic Electrophysiologic Skills Laboratory**  
Clinical application and clinical procedures germane to the Electrophysiologic (EEG) Department. Stress on hospital orientation, job competency, professional growth, and interpersonal communications with staff and patients. Prerequisites: Admission to the Electrophysiologic (END) Technology program. Corequisites: EEG140.
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Periods</th>
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<tbody>
<tr>
<td>ECG200</td>
<td>Clinical Rotation I: Clinical application of electroneurodiagnostic (EEG) skills and knowledge acquired during required program classroom and lab courses. Full supervision of tests performed with progression to independent testing. Prerequisites: Admission to the Electroneurodiagnostics program.</td>
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<tr>
<td>ECG201</td>
<td>Intermediate EEG: Expanded study of neurological and neurophysiological medicine. Discuss the studies in cerebrovascular and central nervous system lesions, metabolic and infectious disease, trauma, congenital, and pediatric disorders. Extensive record review. Evaluate the normal and abnormal electrocardiogram (ECG) patterns related to electroencephalogram (EEG) testing. Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: ECG201LL.</td>
<td>3</td>
<td>3</td>
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<tr>
<td>ECG201LL</td>
<td>Intermediate EEG Laboratory: Expanded study and application of neurological and neurophysiological medicine. Studies in cerebrovascular and central nervous system lesions, metabolic and infectious disease, trauma, congenital, and pediatric disorders. Extensive record review. Normal and abnormal electrocardiogram (ECG) patterns related to electroencephalogram (EEG) testing. Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: ECG201.</td>
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<tr>
<td>ECG205</td>
<td>Applied Evoked Potentials and Nerve Conduction Studies: Theoretical aspects of evoked potentials (EP), mainly visual evoked response (VER), brain auditory evoked response (BAER), and somatosensory evoked potentials (SSEP) tests. EP instrumentation, recording techniques and data analysis of electrical activity of the nervous system elicited by using selected physical stimuli (evoked potentials) and concepts of signal averaging. (in accordance with the most recent American Clinical Neurophysiology Society (ACNS) guidelines on evoked potentials.) Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: ECG205.</td>
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<tr>
<td>ECG205LL</td>
<td>Applied Evoked Potentials and Nerve Conduction Studies Laboratory: Practical aspects of evoked potentials (EP), mainly visual evoked response (VER), brain auditory evoked response (BAER), and somatosensory evoked potential (SSEP) tests. EP instrumentation, recording techniques and data analysis of electrical activity of the nervous system elicited by using selected physical stimuli (evoked potentials) and concepts of signal averaging. (in accordance with the most recent American Clinical Neurophysiology Society (ACNS) guidelines on evoked potentials.) Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: ECG205.</td>
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<tr>
<td>ECG206</td>
<td>Advanced EEG: Comprehensive study of neurological and neurophysiological medicine. Studies in cerebrovascular and central nervous system lesions, metabolic and infectious disease, trauma and congenital and pediatric disorders. Normal and abnormal pattern review. Case presentations. Board examination review. Prerequisites: Admission to the Electroneurodiagnostic (END) program. Corequisites: ECG206LL.</td>
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**Course Listings 2019-2020**

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<tr>
<th>Course Code</th>
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<th>Credits</th>
<th>Periods</th>
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</thead>
<tbody>
<tr>
<td>ECG207</td>
<td>Electroneurodiagnostic Record Review: Normal and abnormal pattern review for adults and pediatric patients. Nerve Conduction Velocity (NCV) pattern recognition and review, special procedures, Long Term Monitoring (LTM), and Intraoperative Monitoring (IOM) pattern recognition and review. Prerequisites: Admission to the Electroneurodiagnostics (END) Technology program.</td>
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<tr>
<td>ECG210</td>
<td>Applied Neurophysiology: Introduction to central nervous system. Emphasis on conduction pathways, anatomy, and blood supply. Survey of neurotransmitters, pharmacology and current research. Prerequisites: Admission to the Electroneurodiagnostic Technology program or Polysomnographic Technology program.</td>
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<tr>
<td>ECG211</td>
<td>Clinical Rotation II: Clinical application of electroneurodiagnostic (EEG) skills and knowledge acquired during didactic courses and clinical practicums. Full supervision of tests performed with progression to independent testing. Prerequisites: Admission to the Electroneurodiagnostics program.</td>
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<tr>
<td>ECG220</td>
<td>Clinical Rotation III: Advanced clinical application of electroneurodiagnostic (EEG) skills and knowledge acquired during didactic courses and clinical practicums. Prerequisites: Admission to the Electroneurodiagnostics program.</td>
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<tr>
<td>ECG282AA</td>
<td>Volunteerism for Electroneurodiagnostic Technology: Service Learning Experience: Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups. EEG282AA may be repeated for a total of six (6) credit hours. Standard grading available according to procedures outlined in catalog. Prerequisites: Permission of Instructor.</td>
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**ELC 103: Electrical/Mechanical Calculations**

Fundamental calculations in arithmetic, algebra, trigonometry, descriptive geometry, economics, and probability. Application of theories and formulas to solve design, installation, maintenance, and troubleshooting problems for industrial, commercial, and residential electrical and mechanical systems. Prerequisites: None.

**ELC 119: Concepts of Electricity and Electronics**

Introduction to theory and principles of electric circuits, magnetism and electromagnetism including basic motors, transformers and generators. Use of basic measuring instruments. Overview of Ohm's and Kirchhoff's Laws and electronics in the modern world. Prerequisites: None.

**ELC 123: Residential Electrical Wiring and Codes**

Analysis and interpretation of residential drawings, local codes and specific sections of the National Electrical Code. Including needed materials derived from plans and specifications and the proper procedures for wiring a residence and other special locations. Areas of focus include circuits, conductors, switches, outlets, heating, security, and communication systems. Prerequisites: None.
**Course Listings 2019-2020**

**EEG200**  
**Clinical Rotation I**  
Clinical application of electroneurodiagnostic (EEG) skills and knowledge acquired during required program classroom and lab courses. Full supervision of tests performed with progression to independent testing. Prerequisites: Admission to the Electroneurodiagnostics program.

EEG201  
**Intermediate EEG**  
Expanded study of neurological and neurophysiological medicine. Discuss the studies in cerebrovascular and central nervous system lesions, metabolic and infectious disease, trauma, congenital, and pediatric disorders. Extensive record review. Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: EEG201LL.

EEG205  
**Applied Evoked Potentials and Nerve Conduction Studies**  
Theoretical aspects of evoked potentials (EP), mainly visual evoked response (VER), brain auditory evoked response (BAER), and somatosensory evoked potential (SSEP) tests. EP instrumentation, recording techniques and data analysis of electrical activity of the nervous system elicited by using selected physical stimuli (evoked potentials) and concepts of signal averaging. (in accordance with the most recent American Clinical Neurophysiology Society (ACNS) guidelines on evoked potentials.) Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program. Corequisites: EEG205.

EEG207  
**Electroneurodiagnostic Record Review**  
Normal and abnormal pattern review for adults and pediatric patients, Nerve Conduction Velocity (NCV) pattern recognition and review, special procedures, Long Term Monitoring (LTM), and Intraoperative Monitoring (IOM) pattern recognition and review. Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program.

EEG208  
**Clinical Rotation II**  
Clinical application of electroneurodiagnostic (EEG) skills and knowledge acquired during didactic courses and clinical practicums. Full supervision of tests performed with progression to independent testing. Prerequisites: Admission to the Electroneurodiagnostic program.

EEG209  
**Clinical Rotation III**  
Advanced clinical application of electroneurodiagnostic (EEG) skills and knowledge acquired during didactic courses and clinical practicums. Full supervision of tests performed with progression to independent testing. Prerequisites: Admission to the Electroneurodiagnostic program.

**Course Listings 2019-2020**

EEG207  
**Electroneurodiagnostic Record Review**  
Normal and abnormal pattern review for adults and pediatric patients, Nerve Conduction Velocity (NCV) pattern recognition and review, special procedures, Long Term Monitoring (LTM), and Intraoperative Monitoring (IOM) pattern recognition and review. Prerequisites: Admission to the Electroneurodiagnostic (END) Technology program.

**ELC103**  
**Electrical/Mechanical Calculations**  
Fundamental calculations in arithmetic, algebra, trigonometry, descriptive geometry, economics, and probability. Application of theories and formulas to solve design, installation, maintenance, and troubleshooting problems for industrial, commercial, and residential electrical and mechanical systems. Prerequisites: None.

**ELC119**  
**Concepts of Electricity and Electronics**  
Introduction to theory and principles of electric circuits, magnetism and electromagnetism including basic motors, transformers and generators. Use of basic measuring instruments. Overview of Ohm’s and Kirchhoff’s Laws and electronics in the modern world. Prerequisites: None.

**ELC123**  
**Residential Electrical Wiring and Codes**  
Analysis and interpretation of residential drawings, local codes and specific sections of the National Electrical Code. Including needed materials derived from plans and specifications and the proper procedures for wiring a residence and other special locations. Areas of focus include circuits, conductors, switches, outlets, heating, security, and communication systems. Prerequisites: None.
Course Listings 2019-2020

**ELC120** Lecture 3 Credits 3 Periods

**Solid State Fundamentals**
Theory of operation of semi-conductor devices, component and system construction, operation, installation, and service. Specific and practical applications in relation to temperature, light, speed and pressure control as used in industry today. Includes amplifiers, power supplies, integrated circuits, alternating current (AC) and direct current (DC) drives, fiber optics, and safety. Prerequisites: None.

**ELC124** Lecture 3 Credits 3 Periods

**Industrial Electrical Wiring and Codes**
Industrial electrical power techniques of low, medium and high voltage systems. Selection of electrical distribution components, single and three phase systems, one-line diagrams, motors, transformers, protective devices, power factor, demand factor, conductor selection, system planning, grounding and energy management. Prerequisites: A grade of C or better in ELC123, or permission of Instructor, or admission to Electric League of Arizona program.

**ELC125** Lec + Lab 3 Credits 3 Periods

**Commercial Electrical Wiring and Codes**
Commercial electrical power distribution techniques of low voltage (under 600 volt) systems. Selection of electrical distribution components, single and three systems, one-line diagrams and conductor selection. System grounding, planning and over current protection. Prerequisites: A grade of C or better in ELC123, or permission of Instructor, or admission to Electric League of Arizona program.

**ELC144** Lec + Lab 3 Credits 3 Periods

**Basic Automated Systems Using Programmable Controllers**
Principles of automated control systems. Principles and application of programmable controllers, control functions, hardware, logic, programming, documentation, troubleshooting, start-up, maintenance and operation. Commercial and industrial control applications. Introduction to commercial programmable controllers. Prerequisites: A grade of C or better in ELC120, or permission of Instructor, or admission to Electric League of Arizona program.

**ELC160** Lecture 3 Credits 3 Periods

**Applied Electrical Codes I**
Analysis of diagrams and application of current code interpretations. Includes local exceptions and practices. Review of the National Electrical Code (NEC) related to definitions, installations, wiring and protection, wiring methods, materials, and equipment. Prerequisites: A grade of C or better in ELC119 or permission of Instructor.

**ELC161** Lecture 3 Credits 3 Periods

**Applied Electrical Codes II**
National Electrical Code (NEC) requirements for hazardous locations, special use and occupancies. Commercial, industrial and service locations. Fiber optics, communications and other state-of-the-art applications. Local inspection practices and requirements. Prerequisites: A grade of C or better in ELC160 or permission of Instructor.

**ELC164** Lecture 3 Credits 3 Periods

**Grounding and Bonding**

**ELC210** Lecture 3 Credits 3 Periods

**AC Machinery and DC Machinery**
Principles and operation of AC (Alternating current) and DC (direct current) motors, generators, and alternators. Includes single-phase motors along with induction, synchronous, and wound-rotor types of three-phase motors. DC motors including shunt-field, series field, wound rotor, permanent magnet, stepper and brushless types. Prerequisites: A grade of C or better in ELC119, or permission of Instructor, or admission to Electric League of Arizona program.

**Course Listings 2019-2020**

**ELC217** Lec + Lab 3 Credits 3 Periods

**Motor Controls**
Electrical symbols, line diagrams and logic. Contacts and starters, control devices, reversing circuits and power distribution systems. Magnetism and magnetic solenoids, reduced voltage starters, and circuits. Hand tools and safety procedures. Prerequisites: A grade of C or better in ELC119 or permission of Department or Division or admission to Electric League of Arizona program.

**ELC218** Lecture 3 Credits 3 Periods

**Variable Frequency Drives**
Principles and operation of frequency controlled AC (alternating current) motor drives, including current source inverters (CSI), variable voltage inverters (VVI) and pulse width modulated inverters (PWM). Heating, ventilation and air conditioning (HVAC) applications along with energy savings, motor pump sizing and torque load calculations. Prerequisites: A grade of C or better in ELC120, or permission of Instructor, or admission to Electric League of Arizona program.

**EMC101** 8 Clock Hours

**CPR/Basic Cardiac Life Support**
Designed to train students in the skills of cardiopulmonary resuscitation to include mouth-to-mouth, mouth-to-mask, cardiac compression, stabilization of adult, infant, and child victims with airway obstruction, respiratory, and cardiac arrest. Prerequisites: Admission into the Emergency Medical Technology program.

**EMC102** 157 Clock Hours

**Emergency Medical Responder**
A comprehensive course to train a lay person to provide care for patients suffering sudden illness or injury. For members of law enforcement agencies, industry, and the private sector. Prerequisites: EMC101.
Course Listings 2019-2020

ELC120 Lecture  3 Credits  3 Periods
Solid State Fundamentals
Theory of operation of semi-conductor devices, component and system construction, operation, installation, and service. Specific and practical applications in relations to temperature, light, speed and pressure control as used in industry today. Includes amplifiers, power supplies, integrated circuits, alternating current (AC) and direct current (DC) drives, fiber optics, and safety. Prerequisites: None.

ELC124 Lecture  3 Credits  3 Periods
Industrial Electrical Wiring and Codes
Industrial electrical power techniques of low, medium and high voltage systems. Selection of electrical distribution components, single and three phase systems, one-line diagrams, motors, transformers, protective devices, power factor, demand factor, conductor selection, system planning, grounding and energy management. Prerequisites: A grade of C or better in ELC123, or permission of Instructor, or admission to Electric League of Arizona program.

ELC125 Lecture + Lab  3 Credits  3 Periods
Commercial Electrical Wiring and Codes
Commercial electrical power distribution techniques of low voltage (under 600 volt) systems. Selection of electrical distribution components, single and three systems, one-line diagrams and conductor selection. System grounding, planning and over current protection. Prerequisites: A grade of C or better in ELC123, or permission of Instructor, or admission to Electric League of Arizona program.

ELC144 Lab + Lab  3 Credits  3 Periods
Basic Automated Systems Using Programmable Controllers
Principles of automated control systems. Principles and application of programmable controllers, control functions, hardware, logic, programming, documentation, troubleshooting, start-up, maintenance and operation. Commercial and industrial control applications. Introduction to commercial programmable controllers. Prerequisites: A grade of C or better in ELC120, or permission of Instructor, or admission to Electric League of Arizona program.

ELC160 Lecture  3 Credits  3 Periods
Applied Electrical Codes I
Analysis of diagrams and application of current code interpretations. Includes local exceptions and practices. Review of the National Electrical Code (NEC) related to definitions, installations, wiring and protection, wiring methods, materials, and equipment. Prerequisites: A grade of C or better in ELC119 or permission of Instructor.

ELC161 Lecture  3 Credits  3 Periods
Applied Electrical Codes II
National Electrical Code (NEC) requirements for hazardous locations, special use and occupations. Commercial, industrial and service locations. Fiber optics, communications and other state-of-the-art applications. Local inspection practices and requirements. Prerequisites: A grade of C or better in ELC160 or permission of Instructor.

ELC164 Lecture  3 Credits  3 Periods
Grounding and Bonding

ELC210 Lecture  3 Credits  3 Periods
AC Machinery and DC Machinery
Principles and operation of AC (Alternating current) and DC (direct current) motors, generators, and alternators. Includes single-phase motors along with induction, synchronous, and wound-rotor types of three-phase motors. DC motors including shunt-field, series field, wound rotor, permanent magnet, stepper and brushless types. Prerequisites: A grade of C or better in ELC119, or permission of Instructor, or admission to Electric League of Arizona program.

ELC217 Lecture + Lab  3 Credits  3 Periods
Motor Controls
Electrical symbols, line diagrams and logic. Contacts and starters, control devices, reversing circuits and power distribution systems. Magnetism and magnetic solenoids, reduced voltage starters, and circuits. Hand tools and safety procedures. Prerequisites: A grade of C or better in ELC119 or permission of Department or Division or admission to Electric League of Arizona program.

ELC218 Lecture  3 Credits  3 Periods
Variable Frequency Drives
Principles and operation of frequency controlled AC (alternating current) motor drives, including current source inverters (CSI), variable voltage inverters (VVI) and pulse width modulated inverters (PWM). Heating, ventilation and air conditioning (HVAC) applications along with energy savings, motor pump sizing and torque load calculations. Prerequisites: A grade of C or better in ELC120, or permission of Instructor, or admission to Electric League of Arizona program.

(ELR) ELECTRICAL
ELR110  157 Clock Hours
Electrical Basics
Gain an understanding of electrical trade, safety and electrical circuits, electrical theory, voltage and current laws, and circuit analysis. Learn electrical codes and device boxes. Prerequisites: None.

ELR111  111 Clock Hours
Electrical Installations
Learn conduit bending fundamentals, raceway and fittings, applications of conductors and cables, electrical drawings, services, and test equipment. Prerequisites: None.

ELR210  119 Clock Hours
Electrical Level 2
Learn about alternating current (AC) circuits, motors and lighting, conduit bending, pull and junction boxes and cable trays. Prerequisites: None.

ELR211  119 Clock Hours
Electrical Applications Level 2
Build an understanding of conductor terminations, splices, grounding and bonding, circuit breakers, fuses and control systems, with an introduction to solar. Prerequisites: None.

(EMC) EMERGENCY MEDICAL TECHNOLOGY
EMC101  8 Clock Hours
CPR/Basic Cardiac Life Support
Designed to train students in the skills of cardiopulmonary resuscitation to include mouth-to-mouth, mouth-to-mask, cardiac compression, stabilization of adult, infant, and child victims with airway obstruction, respiratory, and cardiac arrest. Prerequisites: Admission into the Emergency Medical Technology program.

EMC102  40 Clock Hours
Emergency Medical Responder
A comprehensive course to train a lay person to provide care for patients suffering sudden illness or injury. For members of law enforcement agencies, industry, and the private sector. Prerequisites: EMC101.
EMC104  152 Clock Hours
Basic Emergency Medical Technology
Techniques of emergency medical care in accordance with national and state curriculum. Study of the human body, patient assessment, treatment of medically or traumatically compromised patients, special hazards and medical operations. IV monitoring, Sudden Infant Death Syndrome (SIDS), patient-assisted medication administration, automated external defibrillator (AED), and blood-glucose monitoring. Includes participation in simulated clinical events. Prerequisites: EMC102.

EMC108  300 Clock Hours
Emergency Medical Services and Fire Preparatory Academy
This course is designed specifically for individuals seeking a career in the fire-medical service and addresses foundational emergency medical technology, hazardous materials, and firefighting content material, as well as meeting two of the prerequisites for the fire Department Operations course also known as the “Fire Academy” (FSC104). These two prerequisites are EMT (FSC104) and Hazardous Materials (FSC105). Upon successful completion of the course, the participant will be eligible to sit for the EMT and HAZMAT certification examinations. The course meets current USDOT national standard education guidelines for Emergency Medical Technician. Course teaches techniques of emergency medical care in accordance with national and state curriculum. Study of the human body, patient assessment, treatment of medically or traumatically compromised patients, special hazards, medical operations, IV monitoring, patient-assisted medication administration, automated external defibrillators (AEDs), and blood-glucose monitoring. The course meets the current Hazardous Materials First Responder certification requirements for the Arizona Center for Fire Service Excellence. The course will cover basic methods of recognition and identification based upon the chemical and physical properties of hazardous materials, basic safety procedures when utilizing specific types of protective clothing and equipment, and basic tactical information relating to scene management. Confined space operations in accordance with the National Fire Protection Agency. Prerequisites: Admission into the Emergency Medical Services and Fire Preparatory Academy program.

ENG) ENGLISH

ENG071  Lecture 3 Credits 3 Periods
Preparatory Academic Writing I
Emphasizes preparation for college-level composition and related reading tasks with a focus on communicating through complete, grammatically correct writing, organized to communicate a central idea. Prerequisites: Appropriate writing placement test score or permission of Department or Division.

ENG081  Lecture 3 Credits 3 Periods
Preparatory Academic Writing II
Emphasizes preparation for college-level composition and related reading tasks with a focus on critical writing, reading, and thinking skills and processes. Prerequisites: Appropriate writing placement test score, or a grade of C or better in ENG071 or ESL077, or permission of Department or Division.

ENG091  Lecture 3 Credits 3 Periods
Preparatory Academic Writing III
Emphasizes preparation for first year composition with a focus on critical writing, reading, and thinking skills and processes at an increased level of academic complexity. Prerequisites: Appropriate writing placement test score, or a grade of C or better in ENG081 or ESL087, or permission of Department or Division.

ENG101  Lecture 3 Credits 3 Periods
First-Year Composition
Emphasis on rhetoric and composition with a focus on expository writing and understanding writing as a process. Establishing effective college-level writing strategies through four or more writing projects comprising at least 3,000 words in total. Prerequisites: Appropriate writing placement test score, or a grade of C or better in ENG091 or ESL097.

ENH110  Lecture 3 Credits 3 Periods
Introduction to Literature
Introduction to international literature through various forms of literary expression: e.g. poetry, drama, essay, biography, autobiography, short story, and novel. Provides a global overview of literature with special emphasis on diverse cultural contributions of women, African Americans, Asian Americans, Hispanic Americans, and Native Americans. Prerequisites: None.

ENH190  Lecture 3 Credits 3 Periods
Introduction to the US Ethnic Literature
Introduction to the US ethnic literatures of African Americans, Arab Americans, Asian Americans, Latinos/Latinos, Native Americans, mixed race, and other emerging ethnic groups through various expressions. Examines the interconnections of the various experiences of racialized groups living in the US. Provides ethnic US literature a global context through study of the interconnections with the literatures of Africa, Asia, Latin America, and Oceania. Focus on literary production of at least four specific US ethnic groups and relevant international literatures. Prerequisites or Corequisites: ENG101 or ENG107.

ENH255  Lecture 3 Credits 3 Periods
Contemporary U.S. Literature and Film
Strengths and weaknesses of literature and film. Challenges of adapting literature to film. Addressing racial, ethnic, gender, class and religious differences between cultures and mediums. Use of narrative in each medium and how it translates various cultural values and assumptions. Specific genres present in literature and film. Cultural metaphors and symbols used in literature and film. Prerequisites: A grade of C or better in ENG101.

ENH285  Lecture 3 Credits 3 Periods
Contemporary Women Writers
Explores twentieth century literature (short stories, essays, plays, and poetry) written by women and about women. Focus on themes relevant to women's lives regardless of age, creed, or ethnic background. Prerequisites: None. Cross-References: WST285.

ENH295  Lecture 3 Credits 3 Periods
Banned Books and Censorship
EMC104  152 Clock Hours
Basic Emergency Medical Technology
Techniques of emergency medical care in accordance with national and state curriculum. Study of the human body, patient assessment, treatment of medically or traumatically compromised patients, special hazards and medical operations. IV monitoring, Sudden Infant Death Syndrome (SIDS), patient-assisted medication administration, automated external defibrillators (AEDs), and blood-glucose monitoring. Includes participation in simulated clinical events. Prerequisites: EMC102.

EMC108  300 Clock Hours
Emergency Medical Services and Fire Preparatory Academy
This course is designed specifically for individuals seeking a career in the fire-medical service and addresses foundational emergency medical technology, hazardous materials, and firefighting content material, as well as meeting two of the prerequisites for the Fire Department Operations course also known as the “Fire Academy” (FSC101). These two prerequisites are EMT (EMT/FSC104) and Hazardous Materials (FSC105). Upon successful completion of the course, the participant will be eligible to sit for the EMT and HazMat certification examinations. The course meets current USDOT national standard education guidelines for Emergency Medical Technician. Course teaches techniques of emergency medical care in accordance with national and state curriculum. Study of the human body, patient assessment, treatment of medically or traumatically compromised patients, special hazards, medical operations, IV monitoring, patient-assisted medication administration, automated external defibrillators (AEDs), and blood-glucose monitoring. The course meets the current Hazardous Materials First Responder certification requirements for the Arizona Center for Fire Service Excellence. The course will cover basic methods of recognition and identification based upon the chemical and physical properties of hazardous materials, basic safety procedures when utilizing specific types of protective clothing and equipment, and basic tactical information relating to scene management. Confined space operations in accordance with the National Fire Protection Agency. Prerequisites: Admission into the Emergency Medical Services and Fire Preparatory Academy program.

(ENG) ENGLISH
ENG071  Lecture 3 Credits 3 Periods
Preparatory Academic Writing I
Emphasizes preparation for college-level composition and related reading tasks with a focus on communicating through complete, grammatically correct writing, organized to communicate a central idea. Prerequisites: Appropriate writing placement test score or permission of Department or Division.

ENG081  Lecture 3 Credits 3 Periods
Preparatory Academic Writing II
Emphasizes preparation for college-level composition and related reading tasks with a focus on critical writing, reading, and thinking skills and processes. Prerequisites: Appropriate writing placement test score, or a grade of C or better in ENG071 or ESL077, or permission of Department or Division.

ENG091  Lecture 3 Credits 3 Periods
Preparatory Academic Writing III
Emphasizes preparation for first year composition with a focus on critical writing, reading, and thinking skills and processes at an increased level of academic complexity. Prerequisites: Appropriate writing placement test score, or a grade of C or better in ENG081 or ESL087, or permission of Department or Division.

ENG101  Lecture 3 Credits 3 Periods
First-Year Composition
Emphasis on rhetoric and composition with a focus on expository writing and understanding writing as a process. Establishing effective college-level writing strategies through four or more writing projects comprising at least 3,000 words in total. Prerequisites: Appropriate writing placement test score, or a grade of C or better in ENG091 or ESL097.

Course Listings 2019-2020

ENG102  Lecture 3 Credits 3 Periods
First-Year Composition
SUN# ENG1102
Emphasis on rhetoric and composition with a focus on persuasive, research-based writing and understanding writing as a process. Developing advanced college-level writing strategies through three or more writing projects comprising at least 4,000 words in total. Prerequisites: Grade of C or better in ENG101.

(ENH) ENGLISH HUMANITIES
ENH110  Lecture 3 Credits 3 Periods
Introduction to Literature
Introduction to international literature through various forms of literary expression; e.g. poetry, drama, essay, biography, autobiography, short story, and novel. Provides a global overview of literature with special emphasis on diverse cultural contributions of women, African Americans, Asian Americans, Hispanic Americans, and Native Americans. Prerequisites: None.

ENH190  Lecture 3 Credits 3 Periods
Introduction to the US Ethnic Literature
Introduction to the US ethnic literatures of African Americans, Arab Americans, Asian Americans, Latinas/Latinos, Native Americans, mixed race, and other emerging ethnic groups through various expressions. Examines the interconnections of the various experiences of racialized groups living in the US. Provides ethnic US literature a global context through study of the interconnections with the literatures of Africa, Asia, Latin America, and Oceania. Focus on literary production of at least four specific US ethnic groups and relevant international literatures. Prerequisites or Corequisites: ENG101 or ENG107.

ENH251  Lecture 3 Credits 3 Periods
Mythology
Deals with the myths and legends of civilizations with the greatest influence upon the development of the literature and culture of the English speaking people, and compares those myths with myths from other cultures. Prerequisites: None.

ENH255  Lecture 3 Credits 3 Periods
Contemporary U.S. Literature and Film
Strengths and weaknesses of literature and film. Challenges of adapting literature to film. Addressing racial, ethnic, gender, class and religious differences between cultures and mediums. Use of narrative in each medium and how it translates various cultural values and assumptions. Specific genres present in literature and film. Cultural metaphors and symbols used in literature and film. Prerequisites: A grade of C or better in ENG101.

ENH285  Lecture 3 Credits 3 Periods
Contemporary Women Writers
Explores twentieth century literature (short stories, essays, plays, and poetry) written by women and about women. Focus on themes relevant to women’s lives regardless of age, creed, or ethnic background. Prerequisites: None. Cross-References: WS2785.

ENH295  Lecture 3 Credits 3 Periods
Banned Books and Censorship
ENH298AC Lab 3 Credits 3 Periods
Special Projects
Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development. Common competency course. Prerequisites: Permission of Program Director or Instructor.

(EP) ENTREPRENEURIAL STUDIES
EPS150 Lecture 3 Credits 3 Periods
Introduction to Entrepreneurship
Overview of entrepreneurship. Includes the entrepreneurial process and the skills required to be successful, including starting, planning, financing, marketing, and managing a business. Prerequisites: None.

EPS160 Lecture 2 Credits 2 Periods
New Venture Creation
Process of starting a new venture including evaluating specific business opportunities identifying financing alternatives, and defining start-up issues. Requisites: None.

EPS195 Lecture 2 Credits 2 Periods
Business Start-Up and Planning
Development of a feasibility approach to strategic decision making concerning new venture start-up. Includes development of a business feasibility study and a preliminary business plan. Prerequisites: None.

(ESL) ENGLISH AS A SECOND LANGUAGE
ESL030 Lecture 3 Credits 3 Periods
English as a Second Language III: Grammar
Third level of English as a Second Language (ESL). Emphasis on sentence structure and paragraph building. Extensive grammar study and writing practice. ESL030 may be repeated for a total of six (6) credit hours. Credit (P) or no credit (Z). Standard grading available according to procedures outlined in catalog. Prerequisites: Appropriate ESL placement test score or a grade of P or C or better in ESL020.

ESL031 Lecture 3 Credits 3 Periods
English as a Second Language III: Listening and Speaking
Emphasis on listening and speaking skills related primarily to the academic environment. Asking questions, working in small groups, using college resources, informal oral presentation. ESL031 may be repeated for a total of six (6) credit hours. Prerequisites: Appropriate ESL placement test score, or a grade of C or better in ESL020 or ESL021 or ESL022 or RDG020.

ESL040 Lecture 3 Credits 3 Periods
English as a Second Language IV: Grammar
Fourth level of English as a Second Language (ESL). Continued emphasis on sentence structure and paragraph building. Extensive grammar study and writing practice. ESL040 may be repeated for a total of six (6) credit hours. Credit (P) or no credit (Z). Standard grading available according to procedures outlined in catalog. Prerequisites: Appropriate ESL placement test score or a grade of P or C or better in ESL030.

ESL041 Lecture 3 Credits 3 Periods
English as a Second Language IV: Listening and Speaking
Emphasis on academic skills. Listening to lectures, note taking, peer interaction, accessing and using media resources, formal oral presentations. ESL041 may be repeated for a total of six (6) credit hours. Prerequisites: Appropriate ESL placement test score, or a grade of C or better in ESL030 or ESL031 or ESL032 or RDG030.

ESL050 Lecture 3 Credits 3 Periods
Review Grammar for ESL
Review of grammatical concepts for ESL (English as a Second Language) students who have some previous experience in reading and writing English. Appropriate for students who want to practice sentence skills in English. ESL050 may be repeated for a total of six (6) credit hours. Appropriate ESL course placement score or a grade of C or better in ESL040 or permission of Instructor.

ESL051 Lecture 3 Credits 3 Periods
Pronunciation Improvement for ESL Speakers
Individualized pronunciation practice and drills for English as a second language (ESL) speakers. ESL051 may be repeated for a total of six (6) credit hours. Prerequisites: Appropriate ESL course placement score or a grade of C or better in (ESL020 or ESL021 or ESL022 or RDG020) or permission of Instructor.

(ESOL) ENGLISH FOR SPEAKERS OF OTHER LANGUAGES
ESOL600-00030 Non-Credit
Level 1 ESOL
Level 1 ESOL non credit High beginning level English. Basic conversational skills, pronunciation, spelling, vocabulary development. Grammar patterns practice with sentence level writing. Yes/no and information question development. Practice with reading and answering simple questions. This is a non-credit course.

ESOL600-00031 Non-Credit
Level 2 ESOL
Level 2 ESOL non credit Low intermediate level English. Conversational skills, pronunciation, spelling, vocabulary development. Grammar including simple and continuous tenses in present and past. Comparatives, superlatives yes/no and information questions, parts of speech with multi-sentence level writing. Practice with reading, answering questions and finding main ideas. This is a non-credit course.

ESOL600-00010 Non-Credit
ESOL Basic I
Basic level English with an emphasis on survival skills and successful communication for common daily activities. Introduction to elementary grammar patterns. Focus on listening and speaking English with some practice in writing and reading English. This is a non-credit course.

ESOL600-00020 Non-Credit
ESOL Basic II
Basic level English with an emphasis on negotiating daily activities and work activities with continued focus on acquiring beginning level grammatical patterns. Equal emphasis and practice with reading, writing, listening and speaking to reinforce language form and function. This is a non-credit course.
ENH298AC Lab 3 Credits 3 Periods

Special Projects
Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development. Common competency course. Prerequisites: Permission of Program Director or Instructor.

(ESL) ENGLISH AS A SECOND LANGUAGE

ESL030 Lecture 3 Credits 3 Periods

English as a Second Language III: Grammar
Third level of English as a Second Language (ESL). Emphasis on sentence structure and paragraph building. Extensive grammar study and writing practice. ESL030 may be repeated for a total of six (6) credit hours. Credit (P) or no credit (Z). Standard grading available according to procedures outlined in catalog. Prerequisites: Appropriate ESL placement test score or a grade of C or better in ESL030.

ESL031 Lecture 3 Credits 3 Periods

English as a Second Language III: Listening and Speaking
Emphasis on listening and speaking skills related primarily to the academic environment. Asking questions, working in small groups, using college resources, informal oral presentation. ESL031 may be repeated for a total of six (6) credit hours. Prerequisites: Appropriate ESL placement test score, or a grade of C or better in ESL020 or ESL021 or ESL022 or RDG020.

ESL040 Lecture 3 Credits 3 Periods

English as a Second Language IV: Grammar
Fourth level of English as a Second Language (ESL). Continued emphasis on sentence structure and paragraph building. Extensive grammar study and writing practice. ESL040 may be repeated for a total of six (6) credit hours. Credit (P) or no credit (Z). Standard grading available according to procedures outlined in catalog. Prerequisites: Appropriate ESL placement test score or a grade of P or C or better in ESL030.

(EP) ENTREPRENEURIAL STUDIES

EPS150 Lecture 3 Credits 3 Periods

Introduction to Entrepreneurship
Overview of entrepreneurship. Includes the entrepreneurial process and the skills required to be successful, including starting, planning, financing, marketing, and managing a business. Prerequisites: None.

EPS160 Lecture 2 Credits 2 Periods

New Venture Creation
Process of starting a new venture including evaluating specific business opportunities identifying financing alternatives, and defining start-up issues. Requisites: None.

EPS195 Lecture 2 Credits 2 Periods

Business Start-Up and Planning
Development of a feasibility approach to strategic decision making concerning new venture start-up. Includes development of a business feasibility study and a preliminary business plan. Prerequisites: None.

(ESOL) ENGLISH FOR SPEAKERS OF OTHER LANGUAGES

ESOL600-00010 Non-Credit
Level 1 ESOL
Level 1 ESOL non credit High beginning level English. Basic conversational skills, pronunciation, spelling, vocabulary development. Grammar patterns practice with sentence level writing. Yes/no and information question development. Practice with reading and answering simple questions. This is a non-credit course.

ESOL600-00030 Non-Credit
Level 2 ESOL
Level 2 ESOL non credit Low intermediate level English. Conversational skills, pronunciation, spelling, vocabulary development. Grammar including simple and continuous tenses in present and past. Comparatives, superlatives yes/no and information questions, parts of speech with multi-sentence level writing, Practice with reading, answering questions and finding main ideas. This is a non-credit course.

ESOL600-00031 Non-Credit
Level 2 ESOL
Level 2 ESOL non credit Low intermediate level English. Conversational skills, pronunciation, spelling, vocabulary development. Grammar including simple and continuous tenses in present and past. Comparatives, superlatives yes/no and information questions, parts of speech with multi-sentence level writing, Practice with reading, answering questions and finding main ideas. This is a non-credit course.
Course Listings 2019-2020

(EST) AESTHETICIAN

EST101 6 Clock Hours
Aesthetic Orientation
Program orientation provides the knowledge needed to succeed in the Aesthetics program, and includes topics such as ethics, sanitation, Arizona state law, and other fundamentals of the aesthetics business. Prerequisites: Admission into the Aesthetician program.

EST103 96 Clock Hours
Facial Basics
As students begin their training in aesthetics, they will begin to develop and demonstrate proficiencies in effective client communication, interpersonal skills, and will learn how to deliver an effective skin care facial treatment and client pre and post consultations. Topics will also include sanitation, Arizona laws, client care, and facial care. Prerequisites: EST101 or Program Manager's permission.

EST104 99 Clock Hours
Advanced Facials
This course covers advanced aesthetic modalities such as microdermabrasion, chemical peels, and dermaplaning. Students will also learn skin physiology, skin disorders, and cosmetic chemistry as it applies to ingredient and product knowledge. This course also covers working in the medical field, proper client documentation and consultation as it applies to advanced treatments as well as proper pre and post care and the importance of consent forms. Prerequisites: EST103 or Program Manager's permission.

EST105 99 Clock Hours
Facial Modalities
Students will learn the theory and applications of electrotherapy in aesthetics used to address various skin conditions and client concerns. This course covers how contraindications and various facial machines fit into protocols. Modalities covered include galvanic current, ultrasonic, Tesla current, and microcurrent. Students will also continue to develop client communication, documentation, and professional and personal skills. Prerequisites: EST104 or Program Manager's permission.

EST106 50 Clock Hours
Facial Clinic
Students will apply all of the theory and practical knowledge from the previous courses through facial services to the public. Students will develop a customized protocol for each client, as well as properly documenting treatments, and following all sanitation and Arizona laws. Students will also develop and recommend the proper home care products and retail them to their clients. Prerequisites: EST105 or Program Manager's permission.

EST150 100 Clock Hours
Hair Removal Methods/Makeup Application
Students will learn the theory and application of hard and soft wax, contraindications for hair removal, as well as hair removal for the body and face as well as brow shaping and tinting. Students will also learn proper and sanitary makeup applications for day time, night time and special occasions. Topics will include hair growth cycles, different methods of hair removal, color theory, types of makeup and client consultations, documentation and client bookings. Prerequisites: EST106 or Program Manager's permission.

EST151 100 Clock Hours
Spa Treatments
Topics in this course will include aromatherapy, spa modalities, anatomy, business basics and business ownership. Students will learn and be able to identify facial muscles as well as perform body scrubs, wraps and various other spa treatments. Students will continue to develop effective communication and consultation skills. Students will also practice for the state board practical examination. Prerequisites: EST150 or Program Manager's permission.

Course Listings 2019-2020

EST152 50 Clock Hours
Spa Treatment Clinic
Students will apply the theory and hands-on knowledge they have acquired in the previous courses by providing waxing and spa treatment services to the public. Students will conduct both pre and post consultations, follow all sanitation and Arizona laws, as well as recommend home care and follow up with clients. Students will continue to develop complex protocols and problem solving techniques and effective communication skills. Prerequisites: EST151 or Program Manager's permission.

(EXS) EXERCISE SCIENCE

EXS265BA Lecture 3 Credits 3 Periods
Baseball Theory of Coaching
Reviews the principles, philosophy, strategies and theory of coaching baseball, as a competitive sport. Prerequisites: None.

EXS265SB Lecture 3 Credits 3 Periods
Softball Theory of Coaching
Reviews the principles, philosophy, strategies and theory of coaching baseball, as a competitive sport. EXS265SB may not be repeated for credit. Prerequisites: None.

(FAC) FACILITIES SYSTEMS TECHNOLOGY

FAC105 Lecture 3 Credits 3 Periods
Electricity for Industry

FAC105LL Lab 1 Credit 3 Periods
Electricity for Industry Lab
Diagramming and assembling series circuits, parallel circuits and wiring relays, thermostats, switches and lights. Electrical readings on compressors. Emphasis on safety. Prerequisites: None. Corequisites: ELC/FAC/HVA105 LLC or permission of Instructor. Cross-References: ELC105 LLC HVA105 LLC.

FAC115 Lecture 3 Credits 3 Periods
Motors, Controls and Wiring Diagrams
Principles of three-phase motors. Wye and Delta wiring. Calculation of motor current draw. Sequence of operation, wiring diagrams and electrical components associated with industrial equipment. Procedures for evaluating electrical problems. Safety stressed. Prerequisites: A grade of C or better in ELC/FAC/HVA105 or permission of Department, or a grade of C or better in ELC/FAC/HVA105 LLC or permission of Department. Corequisites: ELC/FAC115 LLC or permission of Department or Division. Cross-References: ELC115.

FAC115LL Lab 1 Credit 3 Periods
Motors, Controls and Wiring Diagrams Lab
Drawing wiring diagrams, wiring systems and checking electrical circuits. Troubleshooting electrical problems of three-phase motors, and controls. Safety stressed. Prerequisites: A grade of C or better in ELC/FAC/HVA105 or permission of Department, or a grade of C or better in ELC/FAC/HVA105 LLC or permission of Department. Corequisites: ELC/FAC115 LLC or permission of Department or Division. Cross-References: ELC115 LLC.

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EST101  6 Clock Hours
Aesthetic Orientation
Program orientation provides the knowledge needed to succeed in the Aesthetics program, and includes topics such as ethics, sanitation, Arizona state law, and other fundamentals of the aesthetics business. Prerequisites: Admission into the Aesthetician program.

EST103  96 Clock Hours
Facial Basics
As students begin their training in aesthetics, they will begin to develop and demonstrate proficiencies in effective client communication, interpersonal skills, and will learn how to deliver an effective skin care facial treatment and client pre and post consultations. Topics will also include sanitation, Arizona laws, client care, and facial care. Prerequisites: EST101 or Program Manager's permission.

EST104  99 Clock Hours
Advanced Facials
This course covers advanced aesthetic modalities such as microdermabrasion, chemical peels, and dermplaning. Students will also learn skin physiology, skin disorders, and cosmetic chemistry as it applies to ingredient and product knowledge. This course also covers working in the medical field, proper client documentation and consultation as it applies to advanced treatments as well as proper pre and post care and the importance of consent forms. Prerequisites: EST103 or Program Manager's permission.

EST105  99 Clock Hours
Facial Modalities
Students will learn the theory and applications of electrotherapy in aesthetics used to address various skin conditions and client concerns. This course covers how contraindications and various facial machines fit into protocols. Modalities covered include galvanic current, ultrasonic, Tesla current, and microcurrent. Students will also continue to develop client communication, documentation, and professional and personal skills. Prerequisites: EST104 or Program Manager's permission.

EST106  50 Clock Hours
Facial Clinic
Students will apply all of the theory and practical knowledge from the previous courses through facial services to the public. Students will develop a customized protocol for each client, as well as properly documenting treatments, and following all sanitation and Arizona laws. Students will also develop and recommend the proper home care products and retail them to their clients. Prerequisites: EST105 or Program Manager's permission.

EST150  100 Clock Hours
Hair Removal Methods/Makeup Application
Students will learn the theory and application of hard and soft wax, contraindications for hair removal, as well as hair removal for the body and face as well as brow shaping and tinting. Students will also learn proper and sanitary makeup applications for day time, night time and special occasions. Topics will include hair growth cycles, different methods of hair removal, color theory, types of makeup and client consultations, documentation and client bookings. Prerequisites: EST106 or Program Manager's permission.

EST151  100 Clock Hours
Spa Treatments
Topics in this course will include aromatherapy, spa modalities, anatomy, business basics and business ownership. Students will learn and be able to identify facial muscles as well as perform body scrubs, wraps and various other spa treatments. Students will continue to develop effective communication and consultation skills. Students will also practice for the state board practical examination. Prerequisites: EST150 or Program Manager's permission.

EST152  50 Clock Hours
Spa Treatment Clinic
Students will apply the theory and hands-on knowledge they have acquired in the previous courses by providing waxing and spa treatment services to the public. Students will conduct both pre and post consultations, follow all sanitation and Arizona laws, as well as recommend home care and follow up with clients. Students will continue to develop complex protocols and problem solving techniques and effective communication skills. Prerequisites: EST151 or Program Manager's permission.

EXS265BA Lecture 3 Credits 3 Periods
Baseball Theory of Coaching
Reviews the principles, philosophy, strategies and theory of coaching baseball, as a competitive sport. Prerequisites: None.

EXS265SB Lecture 3 Credits 3 Periods
Softball Theory of Coaching
Reviews the principles, philosophy, strategies and theory of coaching baseball, as a competitive sport. EXS265SB may not be repeated for credit. Prerequisites: None.
<table>
<thead>
<tr>
<th>Course Listings</th>
<th>2019-2020</th>
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<tbody>
<tr>
<td><strong>FAC186</strong></td>
<td>Lecture</td>
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<tr>
<td><strong>FAC210</strong></td>
<td>Lecture</td>
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<tr>
<td><strong>Facilities Air Conditioning Systems</strong></td>
<td>Overview of the physical principles, including air distribution systems and heating and cooling load calculation. System components and application theory for boilers, chillers, pumps, fans, and cooling towers. Theory and application of central air conditioning systems, air cleaning and humidification devices, pressure boosting, heat storage, expansion and pressurization equipment. Properties of water, pressure distribution in hydronic systems, flow in pipes, pressure drop/heat loss, pump applications and pressurization of open and closed hydronic systems. Fundamentals of low and high temperature water systems. Prerequisites: A grade of C or better in FAC/HVA101 and HVA112, or permission of Department or Division. Corequisites: FAC/HVA210LL or permission of Department or Division. Cross-References: HVA210.</td>
</tr>
<tr>
<td><strong>FAC210LL</strong></td>
<td>Lab</td>
</tr>
<tr>
<td><strong>Facilities Air Conditioning Systems Lab</strong></td>
<td>Routine operations on operational central forced-air conditioning systems and hydronic pumping systems. Components and function of large chillers, cooling towers, hot water boilers, associated piping, pumps and constant volume and variable air volume (VAV) air handlers. Perform pump sizing calculations and measurements. Perform measurements and calculations of pressure and air velocity in ducts. Apply the principles of psychrometrics to central air handling systems. Evaluation of the energy balance of components and systems. Personal and equipment safety. Prerequisites: A grade of C or better in FAC/HVA101 and HVA112, or permission of Department or Division. Corequisites: FAC/HVA210 or permission of Department or Division. Cross-References: HVA210LL.</td>
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<td><strong>FAC220</strong></td>
<td>Lecture</td>
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<tr>
<td><strong>Controls and Instrumentation</strong></td>
<td>Control theory and terminology, pneumatics, electrical, and electronic control devices, flow control devices, elementary and advanced control systems. Electric and electronic control systems, programmable logic controls, and facilities management systems. Process and terms used in instrumentation, methods of heat transfer, calculations for heat temperature, and heat transfer. Measuring and calculating pressure, fluid flow, measuring humidity, control action, and instrumentation symbols. Prerequisites: A grade of C or better in FAC210 HVA210 or permission of Department or Division. Corequisites: FAC220LL or permission of Department or Division.</td>
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<tr>
<td><strong>FAC220LL</strong></td>
<td>Lab</td>
</tr>
<tr>
<td><strong>Controls and Instrumentation Lab</strong></td>
<td>Calibrating pneumatic electrical, and electronic control devices. Commissioning and troubleshooting elementary and advanced control systems. Programming and tuning digital control (DDC) devices. Installing, testing and calibration control and instrumentation sensors. Developing and testing sequences of operation for control loops. Recording and analyzing data from facility management systems. Prerequisites: A grade of C or better in FAC210, HVA210 or permission of Department. Corequisites: FAC220 or permission of Department or Division.</td>
</tr>
<tr>
<td><strong>FAC231</strong></td>
<td>Lecture + Lab</td>
</tr>
</tbody>
</table>
Course Listings 2019-2020

FAC186 Lecture 3 Credits 5 Periods
Electro-Mechanical Devices

FAC210 Lecture 3 Credits 3 Periods
Facilities Air Conditioning Systems
Fundamental principles of air conditioning including all-air, all-water (hydronic) and air-water combination systems. Overview of the physical principles, including air distribution systems and heating and cooling load calculation. System components and application theory for boilers, chillers, pumps, fans, and cooling towers. Theory and application of central air conditioning systems, air cleaning and humidification devices, pressure boosting, heat storage, expansion and pressurization equipment. Properties of water, pressure distribution in hydronic systems, flow in pipes, pressure drop/head loss, pump applications and pressurization of open and closed hydronic systems. Fundamentals of low and high temperature water systems. Prerequisites: A grade of C or better in FAC/HVA101 and HVA112, or permission of Department or Division. Corequisites: FAC/HVA210LL or permission of Department or Division. Cross-References: HVA210.

FAC210LL Lab 1 Credit 3 Periods
Facilities Air Conditioning Systems Lab
Routine operations on operational central forced-air conditioning systems and hydronic pumping systems. Components and function of large chillers, cooling towers, hot water boilers, associated piping, pumps and constant volume and variable air volume (VAV) air handlers. Perform pump sizing calculations and measurements. Perform measurements and calculations of pressure and air velocity in ducts. Apply the principles of psychrometrics to central air handling systems. Evaluation of the energy balance of components and systems. Personal and equipment safety. Prerequisites: A grade of C or better in FAC/HVA101 and HVA112, or permission of Department or Division. Corequisites: FAC/HVA210 or permission of Department or Division. Cross-References: HVA210LL.

FAC220 Lecture 3 Credits 3 Periods
Controls and Instrumentation
Control theory and terminology, pneumatics, electrical, and electronic control devices, flow control devices, elementary and advanced control systems. Electric and electronic control systems, programmable logic controls, and facilities management systems. Process and terms used in instrumentation, methods of heat transfer, calculations for heat temperature, and heat transfer. Measuring and calculating pressure, fluid flow, measuring humidity, control action, and instrumentation symbols. Prerequisites: A grade of C or better in FAC210 HVA210 or permission of Department or Division. Corequisites: FAC220LL or permission of Department or Division.

FAC220LL Lab 1 Credit 3 Periods
Controls and Instrumentation Lab
Calibrating pneumatic electrical, and electronic control devices. Commissioning and troubleshooting elementary and advanced control systems. Programming and tuning direct digital control (DDC) devices. Installing, testing and calibration control and instrumentation sensors. Developing and testing sequences of operation for control loops. Recording and analyzing data from facility management systems. Prerequisites: A grade of C or better in FAC210, HVA210 or permission of Department. Corequisites: FAC220 or permission of Department or Division.

FAC231 Lecture 3 Credits 5 Periods
Codes
GBS120  Lec + Lab  3 Credits  3 Periods
Workplace Communication Skills
Reviews planning, organization, development, and evaluation of written and oral communication in business settings, including informative and persuasive messages. Prerequisites: None.

GBS126  Lec + Lab  1 Credit  1.7 Periods
Writing Resumes
Planning, organizing, and writing a professional resume. Focus on presentation skills including format and language. Prerequisites: None. Cross-References: CPD126.

GBS131  Lecture  3 Credits  3 Periods
Business Calculations
Review of basic arithmetic and application of mathematics to business problems, includes percentage, interest, discount, and markups. Prerequisites: None.

GBS132  Lecture  3 Credits  3 Periods
Personal and Family Financial Security
Principles and practices of personal and family financial planning, includes savings, budgeting, credit, buying versus renting, and general principles of consumerism. Prerequisites: None. Cross-References: HEC132.

GBS151  Lecture  3 Credits  3 Periods
Introduction to Business
Characteristics and activities of current local, national, and international business. An overview of economics, marketing, management and finance. Prerequisites: None.

GBS205  Lecture  3 Credits  3 Periods
Legal, Ethical, and Regulatory Issues in Business
Legal theories, ethical issues and regulatory climate affecting business policies and decisions. Prerequisites: None.

GBS220  Lecture  3 Credits  3 Periods
Quantitative Methods in Business
Business applications of quantitative optimization methods in operations management decisions. Prerequisites: (A grade of C or better in MAT150, or MAT151, or MAT152) or satisfactory score on the District math placement test.

GBS221  Lecture  3 Credits  3 Periods
Business Statistics
Business applications of descriptive and inferential statistics, measurement of relationships, and statistical process management. Includes the use of spreadsheet software for business statistical analysis. Prerequisites: Grade of C or better in GBS220 or MAT217.

GBS233  Lecture  3 Credits  3 Periods
Business Communication
Internal and external business communications, including verbal and nonverbal techniques. Prerequisites: ENGL101 or ENGL107 with grade of C or better or permission of Department or Division.

GBS261  Lecture  3 Credits  3 Periods
Investments I
Evaluation of various investment forms including study of inflation, taxation, government securities, stocks and bonds, real estate and retirement plans. Prerequisites: None.

Course Listings 2019-2020

GBS270AA  Lab  1 Credit  1 Periods
Investments I
General business work experience in a business or industry. Eighty hours of designated work per credit per semester. Maximum of 3 credits allowed. Requisites: Permission of Department or Division.

GBS270AB  Lab  2 Credits  2 Periods
Business Internship
General business work experience in a business or industry. Eighty hours of designated work per credit totaling 160 hours per semester. Maximum of 3 credits allowed. Requisites: Permission of Department or Division.

GBS270AC  Lab  3 Credits  3 Periods
Business Internship
General business work experience in a business or industry. Eighty hours of designated work per credit. GBS270AC may be repeated for a total of six (6) credits. Prerequisites: Permission of Department or Division.

(GLG) GEOLOGY

GLG101  Lecture  3 Credits  3 Periods
Introduction to Geology I – Physical Lecture
Introduction to Earth's materials, surface and internal geologic processes, plate tectonics and geologic time. Prerequisites: None.

GLG103  Lab  1 Credit  3 Periods
Introduction to Geology I – Physical Lab
Includes practical experience in rock and mineral identification, topographic maps, and applied problems in geology. May accompany GLG101. Prerequisites: None.

(GPH) PHYSICAL GEOGRAPHY

GPH113  Lec  4 Credits  Lec  3 Periods  /  Lab 0 Credits  Lab 3 Periods
Introduction to Physical Geography
Spatial and functional relationships among climates, landforms, soils, water, and plants. Prerequisites: None.

(HCC) HEALTH CORE CURRICULUM

HCC109  Lecture  0.5 Credits  0.5 Periods
CPR For Health Care Provider
Current American Heart Association standards for one and two rescuer cardiopulmonary resuscitation (CPR) and obstructed airway procedures on the adult, infant, and pediatric victim. Use of automatic, external defibrillator and resuscitation equipment. Prerequisites: None. Cross-References: RES109.

HCC130  Lecture  3 Credits  3 Periods
Fundamentals in Health Care Delivery
Overview of current and recent development of health care professions, including career and labor market information, health care delivery systems, third party payers, and facility ownership. Health organization structure, patient rights and quality care, Health care and life values. Definition and importance of values, ethics, and essential behaviors in the workplace. Worker rights and responsibilities. Healthful living practices to include nutrition, stress management and

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GBS120  Lec + Lab  3 Credits  3 Periods  
**Workplace Communication Skills**
Reviews planning, organization, development, and evaluation of written and oral communication in business settings, including informative and persuasive messages. Prerequisites: None.

GBS126  Lec + Lab  1 Credit  1.7 Periods  
**Writing Resumes**
Planning, organizing, and writing a professional resume. Focus on presentation skills including format and language. Prerequisites: None. Cross-References: CPD126.

GBS131  Lecture  3 Credits  3 Periods  
**Business Calculations**
Review of basic arithmetic and application of mathematics to business problems, includes percentage, interest, discount, and markups. Prerequisites: None.

GBS132  Lecture  3 Credits  3 Periods  
**Personal and Family Financial Security**
Principles and practices of personal and family financial planning, includes savings, budgeting, credit, buying versus renting, and general principles of consumerism. Prerequisites: None. Cross-References: HEC132.

GBS135  Lecture  3 Credits  3 Periods  
**Introduction to Business**
Characteristics and activities of current local, national, and international business. An overview of economics, marketing, management and finance. Prerequisites: None.

GBS205  Lecture  3 Credits  3 Periods  
**Legal, Ethical, and Regulatory Issues in Business**
Legal theories, ethical issues and regulatory climate affecting business policies and decisions. Prerequisites: None.

GBS220  Lecture  3 Credits  3 Periods  
**Quantitative Methods in Business**
Business applications of quantitative optimization methods in operations management decisions. Prerequisites: (A grade of C or better in MAT150, or MAT151, or MAT152) or satisfactory score on the District math placement test.

GBS221  Lecture  3 Credits  3 Periods  
**Business Statistics**
Business applications of descriptive and inferential statistics, measurement of relationships, and statistical process management. Includes the use of spreadsheet software for business statistical analysis. Prerequisites: Grade of C or better in GBS220 or MAT217.

GBS233  Lecture  3 Credits  3 Periods  
**Business Communication**
Internal and external business communications, including verbal and nonverbal techniques. Prerequisites: ENG101 or ENG107 with grade of C or better or permission of Department or Division.

GBS261  Lecture  3 Credits  3 Periods  
**Investments I**
Evaluation of various investment forms including study of inflation, taxation, government securities, stocks and bonds, real estate and retirement plans. Prerequisites None.
Course Listings 2019-2020

(HCR) HEALTH CARE RELATED

HCR210 Lecture 3 Credits 3 Periods
Clinical Health Care Ethics
An introduction to health care ethics with emphasis on analysis and ethical decision making at both the clinical and health policy levels for health care professionals. Theoretical foundation of bioethics reviewed within historical and contemporary contexts. Prerequisites: A grade of C or better in ENG102 or ENG108 or permission of instructor.

HCR220 Lecture 3 Credits 3 Periods
Introduction to Nursing and Health Care Systems
Introduction to the social, political, and economic contexts of health and health care systems in the United States. Prerequisites: A grade of C or better in ENG102 or ENG108 or permission of instructor.

HCR230 Lecture 3 Credits 3 Periods
Culture and Health
Relation between cultures of diverse groups and health/wellness. Emphasis on cross-cultural communication, including awareness of cultural influences and indigenous and complementary healing practices. Prerequisites: None.

HCR240 Lecture 4 Credits 4 Periods
Human Pathophysiology
Chemical, biological, biochemical, and psychological processes as a foundation for the understanding of alterations in health. The structural and functional pathophysiology of alterations in health; selected therapeutics considered. Prerequisites: A grade of C or better in BIO202 or BIO205, or permission of instructor.

HCR240AA Lecture 2 Credits 2 Periods
Human Pathophysiology I
Chemical, biological, biochemical, and psychological processes as a foundation for the understanding of alterations in health. The structural and functional pathophysiology of alterations in health; selected therapeutics considered. Prerequisites: A grade of C or better in BIO202 or BIO205 or permission of instructor. Corequisites: HCR240AB or permission of instructor.

HCR240AB Lecture 2 Credits 2 Periods
Human Pathophysiology II
Chemical, biological, biochemical, and psychological processes as a foundation for the understanding of alterations in health. The structural and functional pathophysiology of alterations in health; selected therapeutics considered. Prerequisites: A grade of C or better in BIO202 or BIO205 or permission of instructor. Corequisites: HCR240AA or permission of instructor.

(HCS) HOSPITAL CENTRAL SERVICE

HCS100 Lec 5 Credits / Lab 0 Credits Lec 3 Periods / Lab 6 Periods
Fundamentals of Surgical Services
Preparation for the Certified Registered Central Service Technician (CRCST) role. Central Service work flow, job responsibilities, growth and development in the field, anatomy and physiology, microbiology for Central Service regulations and standards, infection prevention and control, tools for cleaning, decontamination, cleaning and decontamination, disinfection, sterile packaging and storage, processing, sterilization, management of patient care equipment, tracking systems, quality assurance, safety, communication, sterile processing for ambulatory surgery and clinics. Prerequisites: None. Corequisites: HCS/SGT102 or permission of Program Director. Cross-References: SGT100.

HCS101 Lecture 1 Credit 1 Period
Medical Terminology for Surgical Services
Medical terminology for patient care in surgery related areas. Use of word parts, term spelling, pronunciation and abbreviations related to all surgical specialties. Prerequisites: None. Corequisites: HCS/SGT100. Cross-References: SGT101.
Course Listings 2019-2020

(HCR) HEALTH CARE RELATED

HCR210  Lecture 3 Credits 3 Periods
Clinical Health Care Ethics
An introduction to health care ethics with emphasis on analysis and ethical decision making at both the clinical and health policy levels for health care professionals. Theoretical foundation of bioethics reviewed within historical and contemporary contexts. Prerequisites: A grade of C or better in ENGL102 or ENGL108 or permission of instructor.

HCR220  Lecture 3 Credits 3 Periods
Introduction to Nursing and Health Care Systems
Introduction to the social, political, and economic contexts of the nursing profession and health care systems in the United States. Prerequisites: A grade of C or better in ENGL102 or ENGL108 or permission of instructor.

HCR230  Lecture 3 Credits 3 Periods
Culture and Health
Relation between cultures of diverse groups and health/illness. Emphasis on cross-cultural communication, including awareness of own cultural influences and indigenous and complementary healing practices. Prerequisites: None.

HCR240  Lecture 4 Credits 4 Periods
Human Pathophysiology
Chemical, biological, biochemical, and psychological processes as a foundation for the understanding of alterations in health. The structural and functional pathophysiology of alterations in health; selected therapeutics considered. Prerequisites: A grade of C or better in BIO202 or BIO205, or permission of instructor.

(HCS) HOSPITAL CENTRAL SERVICE

HCS100  Lec 5 Credits  Lec 3 Periods / Lab 0 Credits  Lab 6 Periods
Fundamentals of Surgical Services
Preparation for the Certified Registered Central Service Technician (CRCST) role. Central Service work flow, job responsibilities, growth and development in the field, anatomy and physiology, microbiology for Central Service regulations and standards, infection prevention and control, tools for cleaning, decontamination, cleaning and decontamination, disinfection, sterile packaging and storage, processing, sterilization, management of patient care equipment, tracking systems, quality assurance, safety, communication, sterile processing for ambulatory surgery and clinics. Prerequisites: None. Corequisites: HCS/SGT102 or permission of Program Director. Cross-References: SGT100.

HCS101  Lecture 1 Credit 1 Period
Medical Terminology for Surgical Services
Medical terminology for patient care in surgery related areas. Use of word parts, term spelling, pronunciation and abbreviations related to all surgical specialties. Prerequisites: None. Corequisites: HCS/SGT100. Cross-References: SGT101.
### Course Listings 2019-2020

#### HCS102  Lec 2 Credits  Lec 1 Periods  /  Lab 0 Credits  Lab 3 Periods
**Basic Surgical Instrumentation for Surgical Services**

#### HCS152  Lec 2 Credits  Lec 1 Period  /  Lab 0 Credits  Lab 3 Periods
**Advanced Surgical Instruments for Surgical Services**
- Surgical specialty instrumentation care and assembly of instruments to include plastic, gynecologic, urologic, basic bone and joint, head and neck, neurosurgery, cardiovascular and thoracic, microscopic, endoscopes, stapling guns, and robotics procedures. Prerequisites: A grade of C or better in HCS/SGT102. Cross-References: SGT152.

#### HCS154  Lab 7 Credits  36 Periods
**Hospital Central Service Practicum**
- Direct supervision of students applying knowledge of Hospital Central Service to include communication, policy and procedures, aseptic and sterile technique, instrument trays and packs, sterilization equipment and documentation performed in the clinical environment. Prerequisites: A grade of C or better in HCS/SGT100 or permission of Instructor. Corequisites: HCS/SGT152.

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#### (HES) HEALTH SCIENCE

#### HES100  Lecture 3 Credits  3 Periods
**Healthful Living**
- Health and wellness and their application to an optimal life style. Explores current topics of interest such as stress management, nutrition, fitness, and environmental health. Evaluates common risk factors associated with modern lifestyles. Prerequisites: None.

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#### (HIS) HISTORY

#### HIS100  Lecture 3 Credits  3 Periods
**History of Western Civilization to Middle Ages**
- Survey of the origin and development of Western civilization and its institutions from prehistory through the Ancient World and the Middle Ages. Prerequisites: None.

#### HIS101  Lecture 3 Credits  3 Periods
**History of Western Civilization Middle Ages to 1789**
- Survey of the origin and development of western civilization and its institutions from the Renaissance and Reformation through Age of Enlightenment. Prerequisites: None.

#### HIS102  Lecture 3 Credits  3 Periods
**History of Western Civilization 1789 to Present**
- Survey of the origin and development of Western civilization and its institutions from the French Revolution through the present. Prerequisites: None.

#### HIS103  Lecture 3 Credits  3 Periods
**United States History to 1865**
- The political, economic, and social development of the United States from the Pre-Columbian period through the end of the Civil War (1865). Prerequisites: None.

#### HIS104  Lecture 3 Credits  3 Periods
**United States History 1865 to Present**
- SUN# HIS1132
  - The political, economic, and social development of the United States from 1865 to the present time. Prerequisites: None.

#### HIS108  Lecture 3 Credits  3 Periods
**United States History 1945 to the Present**
- SUN# HIS1133
  - Survey of American history from 1945 to the present. Focuses on the political, social, economic and cultural history of the United States from the end of World War II to the present time. Includes domestic developments and foreign policy. Prerequisites: None.

#### HIS111  Lecture 3 Credits  3 Periods
**World History 1500 to the Present**
- SUN# HIS1134
  - Survey of the economic, social, cultural, and political elements of world history from 1500 to the present. Prerequisites: None.

#### HIS145  Lecture 3 Credits  3 Periods
**History of Mexico**
- SUN# HIS1135
  - Survey of the political, economic, and social forces which have shaped the development of Mexico from Pre-Columbian times to the present. Prerequisites: None.

#### HIS273  Lecture 3 Credits  3 Periods
**US Experience in Vietnam 1945 - 1975**
- Survey of the US experience in Vietnam, 1945-1975, in view of political, economic, and social forces of the Cold War. Prerequisites: None.

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#### (HON) LEADERSHIP DEVELOPMENT

#### HON201  Lecture 3 Credit  3 Period
**Leadership Development: Historical and Contemporary Perspectives**
- Interdisciplinary study of leadership focusing on development of leadership skills. Prerequisites: Admission to the college honors program or permission of Instructor.

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#### (HRC) HEALTHCARE REGULATORY COMPLIANCE

#### HRC101  Lecture 1 Credit  1 Period
**Overview of Healthcare Compliance**
- Introduction and overview of healthcare compliance; evolution of the field as a profession. Exploration of federally legislated mandates for a compliance program. Program elements. Organizational steps for implementation in specific settings. Prerequisites: None.

#### HRC228  Lecture 3 Credits  3 Periods
**Healthcare Industry Regulation**
- SUN# HIS1136
  - Comprehensive review and study of laws that regulate the healthcare delivery industry including fraud and abuse, patient privacy, Protected Health Information (PHI) and electronic Protected Health Information (ePHI), and occupational safety for workforce members, patients, and visitors. Prerequisites: A grade of C or better in HRC101.
## Course Listings 2019-2020

### HCS102  Lec 2 Credits  Lec 1 Periods / Lab 0 Credits  Lab 3 Periods
**Basic Surgical Instrumentation for Surgical Services**

### HCS152  Lec 2 Credits  Lec 1 Period / Lab 0 Credits  Lab 3 Periods
**Advanced Surgical Instruments for Surgical Services**
Surgical specialty instrumentation care and assembly of instruments to include plastic, gynecologic, urologic, basic bone and joint, head and neck, neurosurgery, cardiovascular and thoracic, microscopic, endoscopes, stapling guns, and robotics procedures. Prerequisites: A grade of C or better in HCS/SGT102. Corequisites: SGT102.

### HCS154  Lab  7 Credits  36 Periods
**Hospital Central Service Practicum**
Direct supervision of students applying knowledge of Hospital Central Service to include communication, policy and procedures, aseptic and sterile technique, instrument trays and packs, sterilization equipment and documentation performed in the clinical environment. Prerequisites: A grade of C or better in HCS/SGT100 or permission of Instructor. Corequisites: HCS/SGT152.

### (HES) HEALTH SCIENCE
**HES100  Lecture 3 Credits  3 Periods**
**Healthful Living**
Health and wellness and their application to an optimal life style. Explores current topics of interest such as stress management, nutrition, fitness, and environmental health. Evaluates common risk factors associated with modern lifestyles. Prerequisites: None.

### (HIS) HISTORY
**HIS100  Lecture 3 Credits  3 Periods**
**History of Western Civilization to Middle Ages**
Survey of the origin and development of Western civilization and its institutions from prehistory through the Ancient World and the Middle Ages. Prerequisites: None.

**HIS101  Lecture 3 Credits  3 Periods**
**History of Western Civilization Middle Ages to 1789**
Survey of the origin and development of western civilization and its institutions from the Renaissance and Reformation through Age of Enlightenment. Prerequisites: None.

**HIS102  Lecture 3 Credits  3 Periods**
**History of Western Civilization 1789 to Present**
Survey of the origin and development of Western civilization and its institutions from the French Revolution through the present. Prerequisites: None.

**HIS103  Lecture 3 Credits  3 Periods**
**United States History to 1865**
The political, economic, and social development of the United States from the Pre-Columbian period through the end of the Civil War (1865). Prerequisites: None.

**HIS104  Lecture 3 Credits  3 Periods**
**United States History 1865 to Present**
Survey of American history from 1865 to the present. Focuses on the political, social, economic, and cultural history of the United States from the end of World War II to the present time. Includes domestic developments and foreign policy. Prerequisites: None.

**HIS108  Lecture 3 Credits  3 Periods**
**United States History 1945 to the Present**
Survey of American history from 1945 to the present. Focuses on the political, social, economic, and cultural history of the United States from the end of World War II to the present time. Includes domestic developments and foreign policy. Prerequisites: None.

**HIS111  Lecture 3 Credits  3 Periods**
**World History 1500 to the Present**
Survey of the political, economic, and social forces which have shaped the development of the Americas from pre-Columbian times to the present. Prerequisites: None.

**HIS145  Lecture 3 Credits  3 Periods**
**History of Mexico**
Survey of the political, economic, and social forces which have shaped the development of Mexico from Pre-Columbian times to the present. Prerequisites: None.

**HIS273  Lecture 3 Credits  3 Periods**
**US Experience in Vietnam 1945 - 1975**
Survey of the US experience in Vietnam, 1945-1975, in view of political, economic, and social forces of the Cold War. Prerequisites: None.

### (HON) LEADERSHIP DEVELOPMENT
**HON201  Lecture 3 Credit 1 Period**
**Leadership Development: Historical and Contemporary Perspectives**
Interdisciplinary study of leadership focusing on development of leadership skills. Prerequisites: Admission to the college honors program or permission of instructor.

### (HRC) HEALTHCARE REGULATORY COMPLIANCE
**HRC101  Lecture 1 Credit 1 Period**
**Overview of Healthcare Compliance**
Introduction and overview of healthcare compliance; evolution of the field as a profession. Exploration of federally legislated mandates for a compliance program. Program elements. Organizational steps for implementation in specific settings. Prerequisites: None.

**HRC228  Lecture 3 Credits  3 Periods**
**Healthcare Industry Regulation**
Comprehensive review and study of laws that regulate the healthcare delivery industry including fraud and abuse, patient privacy, Protected Health Information (PHI) and electronic Protected Health Information (ePHI), and occupational safety for workforce members, patients, and visitors. Prerequisites: A grade of C or better in HRC101.
HRC230 Lecture 3 Credits 3 Periods
Healthcare Corporate Compliance Program Design
Creation, management, and evaluation of all aspects of a formal healthcare corporate compliance program. Compliance officers, compliance committee. Risk analysis, recommendations for corrective action. Implementation of corrective action. Prerequisites: A grade of C or better in HRC101.

HRC232 Lecture 3 Credits 3 Periods
Health Care Regulatory Compliance Program Design
Creation, management, and evaluation of a healthcare regulatory compliance program including the work plan. Address the Health Insurance Portability and Accountability Act (HIPAA) Privacy and Breach Rules, HIPAA Security and Meaningful Use Attestation, Occupational Safety and Health Plan for workforce members, patients, and visitors. Occupational Safety and Health Administration (OSHA); Arizona Division of Occupational Safety and Health (ADOSH), Medicare/Medicaid fraud and abuse, human resources employment laws, Clinical Laboratory Improvement Act (CLIA) and Arizona Radiation Regulatory Agency (ARRA). Prerequisites: A grade of C or better in HRC101.

HRC234 Lecture 3 Credits 3 Periods
Health Care Regulatory Enforcement Case Studies
Comprehensive review of case studies involving litigation and enforcement of health care law including review of landmark and contemporary cases brought by the United States Office of the Inspector General (Fraud and Abuse), the Office of Civil Rights, the Health Insurance Portability and Accountability Act (HIPAA) Privacy and Security Laws. Application of knowledge and skills from earlier coursework to real-world situations. Prerequisites: A grade of C or better in HRC101.

(HSM) HEALTH SERVICE MANAGEMENT
HSM122 Lecture 3 Credits 3 Periods
Health Services Supervision
Skills and techniques for the leadership and supervision of health services employees. Emphasis placed on assertive supervision, effective human relations skills, and the enhancement of oral and written workplace communications. Prerequisites: None.

HSM125 Lecture 3 Credits 3 Periods
Current Issues in Health Services Management
Overview of the inner workings of the health care industry and the forces that drive and control the delivery of health services. Explores financial, technological and human resources, regulatory systems, and national, state and local issues. Prerequisites: None.

HSM222 Lecture 3 Credits 3 Periods
Health Services Management
The role and functions of management in understanding and building organizational effectiveness. Focuses on the manager as a leader and planner capable of developing motivated and committed employees and work teams. Prerequisites: None.

HSM226 Lecture 3 Credits 3 Periods
Ethics and Legacies of Health Services Management
Identification, analysis, and problem solving related to legal and ethical issues in health services management. Includes an emphasis on employment law, confidentiality issues, accurate financial reporting and personal promotional preparation. Prerequisites: None.

HUM108 Lecture 3 Credits 3 Periods
Contemporary Humanities
An exploration of human expression in contemporary arts and sciences. Prerequisites: None.

HUM205 Lecture 3 Credits 3 Periods
Introduction to Cinema
Survey of the history and development of the art of motion pictures, including criticism of aesthetic and technical elements. Prerequisites: None. Cross-References: THF205.
HRC230 Lecture 4 Credits 3 Periods
Healthcare Corporate Compliance Program Design
Creation, management, and evaluation of all aspects of a formal healthcare corporate compliance program. Compliance officers, compliance committee. Risk analysis, recommendations for corrective action. Implementation of corrective action. Prerequisites: A grade of C or better in HRC101.

HRC234 Lecture 4 Credits 3 Periods
Health Care Regulatory Enforcement Case Studies
Comprehensive review of case studies involving litigation and enforcement of health care law including review of landmark and contemporary cases brought by the United States Office of the Inspector General (Fraud and Abuse), the Office of Civil Rights, the Health Insurance Portability and Accountability Act (HIPAA) Privacy and Security Rules. Application of knowledge and skills from earlier coursework to real-world situations. Prerequisites: A grade of C or better in HRC101.

(HSM) HEALTH SERVICE MANAGEMENT
HSM122 Lecture 3 Credits 3 Periods
Health Services Supervision
Skills and techniques for the leadership and supervision of health services employees. Emphasis placed on assertive supervision, effective human relations skills, and the enhancement of oral and written workplace communications. Prerequisites: None.

HSM125 Lecture 3 Credits 3 Periods
Current Issues in Health Services Management
Overview of the inner workings of the health care industry and the forces that drive and control the delivery of health services. Explores financial, technological and human resources, regulatory systems, and national, state and local issues. Prerequisites: None.

HSM222 Lecture 3 Credits 3 Periods
Health Services Management
The role and functions of management in understanding and building organizational effectiveness. Focuses on the manager as a leader and planner capable of developing motivated and committed employees and work teams. Prerequisites: None.

HSM226 Lecture 3 Credits 3 Periods
Ethics and Legalities of Health Services Management
Identification, analysis, and problem solving related to legal and ethical issues in health services management. Includes an emphasis on employment law, confidentiality issues, accurate financial reporting and personal promotional preparation. Prerequisites: None.

(HUM) HUMANITIES
HUM108 Lecture 3 Credits 3 Periods
Contemporary Humanities
An exploration of human expression in contemporary arts and sciences. Prerequisites: None.

HUM205 Lecture 3 Credits 3 Periods
Introduction to Cinema
Survey of the history and development of the art of motion pictures, including criticism of aesthetic and technical elements. Prerequisites: None. Cross-References: THF205.
HUM210 Lecture 3 Credits 3 Periods
Contemporary Cinema
A study of contemporary films, directors and critics with emphasis on evaluating film as an art form. Prerequisites: None. Cross-Reference: THF210.

HUM245 Lecture 3 Credits 3 Periods
Introduction to Holocaust Studies
Introduction to essential information about the Holocaust. Provides theological, social and political background to establish contexts of antisemitism, especially in 19th and 20th centuries, with particular attention to National Socialist ideologies. Ghetto and camp life, including resistance, are explored. Emphasis is on texts of the Holocaust, including historical documents, participant testimonies, fiction, creative non-fiction, and poetry, much of which involves theological and moral debate. Includes analysis of supplementary visual material and some performing arts. Prerequisites: None. Corequisites: CRE101, or CRE111, or equivalents as indicated by appropriate reading placement test score recommended but not required.

HUM250 Lecture 3 Credits 3 Periods
Ideas and Values in the Humanities
An historical analysis of the interrelationships of art, architecture, literature, music, and philosophy from the early civilizations to the Renaissance, including Western and Non-Western cultures. Prerequisites: A grade of C or better in ENG101.

HUM251 Lecture 3 Credits 3 Periods
Ideas and Values in the Humanities
An historical analysis of the interrelationships of art, architecture, literature, music, and philosophy from the Renaissance to Modern period, including Western and Non-Western cultures. Prerequisites: A grade of C or better in ENG101.

(HVA) HEATING, VENTILATING AND AIR CONDITIONING

HVA101 Lecture 3 Credits 3 Periods
Refrigeration Applications and Components I

HVA101LL Lab 1 Credit 3 Periods
Refrigeration Applications and Components I Lab
Servicing refrigeration units. Includes soldering tubing, installing/removing manifold gauge set, evacuating and charging the system. Emphasis on safety. Prerequisites: None. Corequisites: FAC/HVA101 or permission of Instructor. Cross-References: FAC101LL.

HVA103 Lecture 3 Credits 3 Periods
Refrigeration Applications and Components II
Actual refrigerating cycles and pressure-enthalphy analysis of chlorofluorocarbon (CFC) and hydrofluorocarbon (HCFC) replacements. Selection of refrigeration components, sizing, and layouts of refrigerant piping, supermarket refrigeration system operation. Prerequisites: A grade of C or better in HVA/FAC101. Corequisites: HVA103LL.

HVA102 Lecture 3 Credits 3 Periods
Pressure-enthalphy evaluation of operating systems from a simple saturated cycle to actual operating conditions. System performance evaluation including evaporator superheat, adjustments of suction pressure regulators and compressor crankcase pressure regulator, and evaluation of refrigerant piping. Prerequisites: A grade of C or better in HVA/FAC101. Corequisites: HVA103.

HVA104 Lecture 0.5 Credits 0.5 Periods
EPA Section 608 Technician Preparation and Certification
Laws, standards and procedures for the preparation to complete the certification for the Environmental Protection Agency (EPA) SECTION 608 - stationary equipment. Core certification requirements for Type I Technicians, Type II Technicians, Type III Technicians, and Universal Technicians. Type I Technician - primarily works on small appliances. Type II Technician - primarily works on appliances/equipment using high and very high pressure refrigerant. Type III Technician - primarily works on appliances/equipment using a low pressure refrigerant. Universal Technician - for servicing all appliances. Prerequisites: None.

HVA112 Lecture 3 Credits 3 Periods
Heating and Air Conditioning
Types and styles of cooling equipment and duct systems. Methods of supplying air to spaces for heating and cooling. Human comfort factors related to heating and cooling. Psychrometric terminology and applications. Operation, control, and metering devices for heat pumps and package air conditioning systems. Basic heating and ventilating equipment including performance measurement of heating and combustion equipment. Procedures used with DX cooling and gas-fired and electric heating equipment. Troubleshooting techniques, local gas and electric codes, and safety precautions. Prerequisites: A grade of C or better in HVA/ELEC105. Corequisites: HVA112LL.

HVA112LL Lab 1 Credit 3 Periods
Heating and Air Conditioning Lab
Application of routine procedures related to heating and air conditioning. Includes identification of air conditioning and heating system components, evaluation of energy balance, identification of electrical malfunctions, and proper refrigerant handling procedures. Emphasis on safety. Prerequisites: A grade of C or better in HVA/ELEC105. Corequisites: HVA112.

HVA143 Lecture 3 Credits 3 Periods
Load Calculation and Duct Design
Heat transmission factors calculations for specific types and combinations of construction materials. Application of design factors for cooling and heating load determination. Methods for residential applications. Design of residential and light commercial ducting systems. Calculation of duct size for constant and variable air flow, system operating characteristics and air measuring devices. Protocols to test, adjust, and balance an air distribution system. Prerequisites: None.

HVA231 Lecture + Lab 3 Credits 5 Periods
Codes

(HVC) HVAC - HEATING, VENTILATING, AND AIR CONDITIONING

HVC110 224 Clock Hours
HVAC Basics
Learn basic principles of heating, ventilation, and air conditioning (HVAC), trade-related mathematics and electrical concepts. Prerequisites: None.
HUM210 Lecture 3 Credits 3 Periods
Contemporary Cinema

HUM245 Lecture 3 Credits 3 Periods
Introduction to Holocaust Studies
Introduction to essential information about the Holocaust. Provides theological, social, and political background to establish contexts of antisemitism, especially in 19th and 20th centuries, with particular attention to National Socialist ideologies. Ghetto and camp life, including resistance, are explored. Emphasis is on texts of the Holocaust, including historical documents, participant testimonies, fiction, creative non-fiction, and poetry, much of which involves theological and moral debate. Includes analysis of supplementary visual material and some performing arts. Prerequisites: None. Corequisites: CRE101, or CRE111, or equivalent as indicated by appropriate reading placement test score recommended but not required.

HUM250 Lecture 3 Credits 3 Periods
Ideas and Values in the Humanities
An historical analysis of the interrelationships of art, architecture, literature, music, and philosophy from the early civilizations to the Renaissance, including Western and Non-Western cultures. Prerequisites: A grade of C or better in ENG101.

HUM251 Lecture 3 Credits 3 Periods
Ideas and Values in the Humanities
An historical analysis of the interrelationships of art, architecture, literature, music, and philosophy from the Renaissance to Modern period, including Western and Non-Western cultures. Prerequisites: A grade of C or better in ENG101.

(HVA) HEATING, VENTILATING AND AIR CONDITIONING

HVA101 Lecture 3 Credits 3 Periods
Refrigeration Applications and Components I

HVA101LL Lab 1 Credit 3 Periods
Refrigeration Applications and Components I Lab
Servicing refrigeration units. Includes soldering tubing, installing/removing manifold gauge set, evacuating and charging the system. Emphasis on safety. Prerequisites: None. Corequisites: FAC/HVA101 or permission of instructor. Cross-references: FAC101LL.

HVA103 Lecture 3 Credits 3 Periods
Refrigeration Applications and Components II
Actual refrigerating cycles and pressure-enthalpy analysis of chlorofluorocarbon (CFC) and hydrofluorocarbon (HCFC) replacements. Selection of refrigeration components, sizing, and layouts of refrigerant piping, supermarket refrigeration system operation. Prerequisites: A grade of C or better in HVA/FAC101. Corequisites: HVA103LL.

HVA104 Lecture 0.5 Credits 0.5 Periods
EPA Section 608 Technician Preparation and Certification
Laws, standards and procedures for the preparation to complete the certification for the Environmental Protection Agency (EPA) Section 608 - stationary equipment. Core certification requirements for Type I Technicians, Type II Technicians, Type III Technicians, and Universal Technicians. Type I Technician - primarily works on small appliances. Type II Technician - primarily works on appliances/equipment using high and very high pressure refrigerant. Type III Technician - primarily works on appliances/equipment using a low pressure refrigerant. Universal Technician - for servicing all appliances. Prerequisites: None.

HVA112 Lecture 3 Credits 3 Periods
Heating and Air Conditioning
Types and styles of cooling equipment and duct systems. Methods of supplying air to spaces for heating and cooling. Human comfort factors related to heating and cooling. Psychrometric terminology and applications. Operation, control, and metering devices for heat pumps and package air conditioning systems. Basic heating and ventilating equipment including performance measurement of heating and combustion equipment. Procedures used with DX cooling and gas-fired and electric heating equipment. Troubleshooting techniques, local gas and electric codes, and safety precautions. Prerequisites: A grade of C or better in HVA/ECL/FAC105. Corequisites: HVA112LL.

HVA112LL Lab 1 Credit 3 Periods
Heating and Air Conditioning Lab
Application of routine procedures related to heating and air conditioning. Includes identification of air conditioning and heating system components, evaluation of energy balance, identification of electrical malfunctions, and proper refrigerant handling procedures. Emphasis on safety. Prerequisites: A grade of C or better in HVA/ECL/FAC105. Corequisites: HVA112.

HVA143 Lecture 3 Credits 3 Periods
Load Calculation and Duct Design
Heat transmission factors calculations for specific types and combinations of construction materials. Application of design factors for cooling and heating load determination. Methods for residential applications. Design of residential and light commercial ducting systems. Calculation of duct size for constant and variable air flow systems. Operating characteristics and air measuring devices. Protocols to test, adjust, and balance an air distribution system. Prerequisites: None.

HVA231 Lec + Lab 3 Credits 5 Periods
Codes

(HVC) HVAC - HEATING, VENTILATING, AND AIR CONDITIONING

HVC110 224 Clock Hours
HVAC Basics
Learn basic principles of heating, ventilation, and air conditioning (HVAC), trade-related mathematics and electrical concepts. Prerequisites: None.
HVC111  132 Clock Hours
HVAC Systems
Learn the principles of heating, cooling and air distribution. Prerequisites: None.

HVC112  132 Clock Hours
HVAC Installations
Gain knowledge of the principles and procedures of heating, ventilation, and air conditioning (HVAC) piping installation. Prerequisites: None.

HVC113  136 Clock Hours
HVAC Troubleshooting
Understand the principles and procedures of heating, ventilation, and air conditioning (HVAC) systems troubleshooting. Prerequisites: None.

(ICE) IMAGING CONTINUING EDUCATION
ICE220 Lecture 3 Credits 3 Periods
Sectional Anatomy
Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, chest, abdomen and pelvic cavity. DMI220 Requisites: Prerequisites: Admission to the Medical Radiography Program or permission of Instructor. Prerequisites: A grade of C or better in (BIO160 or BIO201) and (HCC145 or HCC146), or a graduate of a related medical program of study, or currently registered as a technologist in radiography, nuclear medicine, radiation therapy or sonography. Cross-References: DMI/DMS220.

ICE223 Lecture 1 Credit 1 Period
Introduction to Computed Tomography
Overview of the principles and operation of computed tomography (CT) scanner. Content includes history, physics processes, instrumentation components, imaging acquisition, reconstruction and display for computed tomography imaging. Prerequisites: Admission to the Medical Radiography program or permission of Instructor. Cross-References: DMI223.

ICE229 Lecture 2 Credits 2 Periods
Magnetic Resonance (MR) Multi-Planar Sectional Anatomy
Three-dimensional sectional anatomy in transverse, sagittal and coronal planes of specified regions of the human body as viewed from magnetic resonance imagery. Includes structure identification of the bones, muscles, vascular system, organs, soft tissue components and weighted imaging. Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (certified by American Registry of Diagnostic Medical Sonography (ARDMS) or ARRT in Diagnostic Medical Sonography), or (Radiography, Radiation Therapist, Nuclear Medicine, or Sonography student currently enrolled at GateWay), or registry eligible graduate] and a grade of C or better in DMI/DMS/ICE220 and ICE223.

ICE233 Lecture 1 Credit 1 Period
Fundamentals of Magnetic Resonance Imaging (MRI)
Overview of magnetic resonance imaging, program policies and student responsibilities. Includes fundamental principles of magnetic resonance imaging (MRI), primary and secondary equipment, and MRI terminology. Imaging parameters, clinical applications for MRI and preparation for physics, instrumentation, and safety coursework. Basic overview of safety issues and MRI contrast agents. Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (certified by American Registry of Diagnostic Medical Sonography (ARDMS) or ARRT in Diagnostic Medical Sonography), or (Radiography, Radiation Therapist, Nuclear Medicine or Sonography student currently enrolled at GateWay), or registry eligible graduate. Corequisites: DMI/DMS/ICE220 or permission of Department or Division.

ICE248 Lecture 2 Credits 2 Periods
Computed Tomography (CT) Multi-Planar Sectional Anatomy
Sectional human anatomy in the transverse, sagittal and coronal planes. Multi-planar emphasis on the musculoskeletal system to include multi-planar imaging of the facial bones, cervical, thoracic and lumbar spine, and extremities; and the heart and vascular structures. Prerequisites: [(Certified by American Registry of Diagnostic Medical Sonographers (ARDMS) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (Radiography or Nuclear Medicine student currently enrolled at GateWay), or registry eligible graduates) and DMI/DMS/ICE220 and (DMI/ICE223 or NUC250) with a grade of C or higher, or permission of Instructor.

ICE254 Lab 1 Credit 6 Periods
Advanced Imaging Practicum
Advanced imaging procedures for the graduate radiologic technologist from American Registry of Radiologic Technologists (ARRT) or registry eligible graduate performed under strict supervision. Use of correct technical and positioning techniques. Apply safety measures and procedures established by the institution and college. Observe ethical and legal guidelines and use of effective communication skills. ICE254 may be repeated for a total of ten (10) credit hours. Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (Radiography or Nuclear Medicine student currently enrolled at GateWay), or registry eligible graduates) or permission of Instructor.

ICE263 Lecture 3 Credits 3 Periods
Computed Tomography Physics and Instrumentation
Overview and evolution of computed tomography (CT) in medical imaging to include: X-ray production, CT principles, system components and operation; image acquisition, processing, reconstruction, and display; artifacts, quality assurance, radiation dosimetry, and patient safety; contrast administration, imaging protocols; and competences as outlined by American Registry of Radiologic Technologists (ARRT) for the CT certification examination. Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (Radiography or Nuclear Medicine student currently enrolled at GateWay), or registry eligible graduates] and DMI/DMS/ICE220 and (DMI/ICE223 or NUC250) with a grade of C or higher, or permission of Instructor.

ICE264 Lecture 3 Credits 3 Periods
MRI Physics, Instrumentation and Safety
An overview into the physics, equipment, physical design, and image characteristics of magnetic resonance imaging (MRI) systems. Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (certified by American Registry of Diagnostic Medical Sonography (ARDMS) or ARRT in Diagnostic Medical Sonography), or (Radiography, Radiation Therapist, Nuclear Medicine, or Sonography student currently enrolled at GateWay), or registry eligible graduate] and a grade of C or better in DMI/DMS/ICE220 and ICE223.

ICE265 Lecture 3 Credits 3 Periods
Computed Tomography Procedure Protocols
Standard procedures and protocols for computed tomography (CT) imaging in alignment with the American Society of Radiologic Technologists (ASRT) examination curriculum outline. Includes patient preparation and safety, choosing appropriate protocols, interventional procedures, contrast indicators, post-exam processing quality issues, and adapting to atypical scanning situations. Prerequisites: [(Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy), or (certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine), or (Radiography or Nuclear Medicine student currently enrolled at GateWay), or registry eligible graduate] and (DMI/ICE223 or NUC250), and ICE248, and ICE263 with a grade of C or higher, or permission of Instructor.
ICE220  Lecture  3 Credits  3 Periods  
**Sectional Anatomy**

Sectional human anatomy. Emphasis on the relationships of the bones, muscles, and body systems. Prerequisites: A grade of C or better in BIO160 or BIO201 and HCC145 or HCC146 or a graduate of a related medical program or study, or currently registered as an X-ray technician. Cross-References: DMI/DM521.

ICE223  Lecture  1 Credit  1 Period  
**Introduction to Computed Tomography**

Overview of the principles and operation of computed tomography (CT) scanner. Content includes history, physics processes, instrumentation components, imaging acquisition, reconstruction and display for computed tomography imaging. Prerequisites: Admission to the Medical Radiography program or permission of Instructor. Cross-References: DMI223.

ICE229  Lecture  2 Credits  2 Periods  
**Magnetic Resonance Imaging**

Fundamentals of magnetic resonance imaging (MRI). Primary and secondary equipment, and MRI terminology. Imaging parameters, clinical applications for MRI and preparation for physics, instrumentation, and safety coursework. Basic overview of safety issues and MRI contrast agents. Prerequisites: Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy, or by the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine, or by the American Registry of Diagnostic Medical Sonography (ARDMS) or ARRT in Diagnostic Medical Sonography or Nuclear Medicine, or Nuclear Medicine, or Sonography student currently enrolled at GateWay, or registry eligible graduate and a grade of C or better in DMI/DM521.

ICE233  Lecture  1 Credit  1 Period  
**Fundamentals of Magnetic Resonance Imaging (MRI)**

Overview of magnetic resonance imaging, program policies and student responsibilities. Includes fundamental principles of magnetic resonance imaging (MRI), primary and secondary equipment, and MRI terminology. Imaging parameters, clinical applications for MRI and preparation for physics, instrumentation, and safety coursework. Basic overview of safety issues and MRI contrast agents. Prerequisites: Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy, or by the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine, or by the American Registry of Diagnostic Medical Sonography (ARDMS) or ARRT in Diagnostic Medical Sonography or Nuclear Medicine, or Nuclear Medicine, or Sonography student currently enrolled at GateWay, or registry eligible graduate. Corequisites: DMI/DM521 or permission of Department or Division.
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<td><strong>Computed Tomography Advanced Imaging Practicum</strong></td>
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| Computed Tomography Advanced Imaging Practicum
| Computed tomography advanced imaging clinical practicum for those certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy, or certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine, or current Radiography or Nuclear Medicine student, or registry eligible graduates to perform under strict supervision. Use of correct computed tomography instrumentation, protocol implementation and positioning techniques. Apply correct patient safety measures and follow As Low As Reasonably Achievable (ALARA) practices to reduce radiation dose as established by the institution. Practice within established ethical and legal guidelines. Effective communication skills. Prerequisites: Currently enrolled in the Computed Tomography program. |
| ICE268     | Lab    | 2       | 12      |
| Lect       | 2 Credits | 12 Periods |
| MRI Advanced Imaging Practicum
| Advanced magnetic resonance imaging (MRI) clinical practicum is for those certified by the American Registry of Radiologic Technologists (ARRT) in radiography, radiation therapy, or sonography, or certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine. Use of correct magnetic resonance imaging instrumentation, protocol implementation and positioning techniques. Apply correct patient care and communication skills. Effective communication skills. ICE268 may be repeated for a total of four (4) credit hours. |
| ICE269     | Lecture | 3       | 3       |
| Credits    | 3 Periods |
| Magnetic Resonance Procedure Protocols
| Imaging techniques related to the central nervous system (CNS), neck, thorax, musculoskeletal system and abdominal/pelvic regions. Specific clinical application, available coils and use. Considerations in scan sequences, specific choices in protocols including slice thickness, phase direction, flow compensation, and positioning criteria. Anatomical structures and plane anatomy as they demonstrate anatomy. Signal characteristics of normal and abnormal structures. Prerequisites: Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy, or certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine, or certified by American Registry of Diagnostic Medical Sonography (ARDMS) or (Radiography or Nuclear Medicine student), or registry eligible graduate(s) and ICE233 and ICE264 with a grade of C or higher, or permission of instructor. |
| ICE272     | Lecture | 3       | 3       |
| Credits    | 3 Periods |
| Magnetic Resonance Pathology
| Common pathologies found in magnetic resonance imaging, their appearance with various imaging protocols including all commonly imaged body systems and organs. Case studies and images of the pathologies to reinforce the lectures. Prerequisites: Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy, or certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine, or certified by American Registry of Diagnostic Medical Sonography (ARDMS) or (Radiography or Nuclear Medicine student), or registry eligible graduate(s) and ICE233 and ICE264 with a grade of C or higher, or permission of instructor. |
| ICE273     | Lecture | 3       | 3       |
| Credits    | 3 Periods |
| Computed Tomography Pathology
| Common diseases diagnosed using computed tomography (CT) imaging. Appearance of pathology on CT to include: physiology, etiology, and diagnosis. Case studies, images, and descriptions of pathologic conditions in various body systems will be provided in alignment with CT certification guidelines published by the American Registry of Radiologic Technologists (ARRT). Prerequisites: Certified by American Registry of Radiologic Technologists (ARRT) in Radiography or in Radiation Therapy, or certified by ARRT or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine, or (Radiography or Nuclear Medicine student currently enrolled at Gateway) or registry eligible graduate(s) and DM/DMS/ICE220 and ICE248 with a grade of C or higher, or permission of instructor. |
| ICE291     | Lecture | 1       | 1       |
| Credits    | 1 Period |
| Computed Tomography Registry and Board Exam Preparation
| Discussion of concepts outlined in the American Registry of Radiologic Technologists (ARRT) published content specifications for their post-primary certification exam in computed tomography (CT). Prerequisites: An approved grade of C or better in DM/DMS/ICE220, ICE248, and ICE263, or permission of instructor. |
| ICE292     | Lecture | 1       | 1       |
| Credits    | 1 Period |
| MRI Board Exam Review Preparation
| Preparation for the American Registry of Radiologic Technologists (ARRT) Medical Resonance Imaging (MRI) examination. Review of elements required to pass the AART examination, including patient care and safety, imaging procedures, data acquisition, and physical principles of image formation. Prerequisites: A grade of C or better in DM/DMS/ICE220, ICE229, ICE233, ICE264, ICE269, and ICE272. Corequisites: ICE254. |
| IMC238     | Lecture + Lab | 6 Credits | 6 Periods |
| Magnetic Trades Construction: Pipefitting Advanced Principles and Concepts
| Advanced principles and concepts for the pipefitting trade relative to blueprint reading, drawing, and detail sheets. Advanced application of weld pipe fabrication, rigging, standards, and specifications. Prerequisites: Certified by American Registry of Radiologic Technologists (ARRT) or the Nuclear Medicine Technology Certification Board (NMTCB) in Nuclear Medicine, or Certified by ARRT or the American Registry of Diagnostic Medical Sonography (ARDMS) or (Radiography or Nuclear Medicine student), or registry eligible graduate(s). |
| IND138     | Lecture | 1       | 1       |
| Credits    | 1 Period |
| Construction Scheduling and Time Management
| Fundamental training in scheduling, including listing and sequencing, bar charts, network diagrams and methods of managing resources. Importance of formal schedules, job planning, and establishing priorities and alternative scheduling methods. Prerequisites: None. Cross-References: CON138. |
| IND140     | Lecture | 1       | 1       |
| Credits    | 1 Period |
| Introduction to Project Management and Resource Control
| Technical and management skills such as preconstruction planning, cost, risk control and policy development. Criteria for project layout purchasing, subcontractor management, project layout. Preparation process for project start up, close out and alternate project delivery methods. Major factors which affect production control and production control standards. Prerequisites: None. Cross-References: CON140. |
| IRW102     | Lecture + Lab | 3 Credits | 3 Periods |
| Reinforcing: Rebar
| Reinforced concrete; manufacture of reinforcing steel; tools, ties, and safety: types of reinforcing used in building construction; bridge construction; purpose and location of reinforcing steel in concrete; fabricating, unloading, handling, and storing, reinforcing steel, reading engineering and placing drawings. Prerequisites: Registered Apprentice status or permission of the Apprenticehip Coordinator. |
| IRW130     | Lecture + Lab | 3 Credits | 4 Periods |
| Construction Scheduling and Time Management
| Fundamental training in scheduling, including listing and sequencing, bar charts, network diagrams and methods of managing resources. Importance of formal schedules, job planning, and establishing priorities and alternative scheduling methods. Prerequisites: None. Cross-References: CON140.
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<th>Course Listings 2019-2020</th>
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<tbody>
<tr>
<td>IRW150 Lect + Lab 3 Credits 4 Periods</td>
</tr>
<tr>
<td>Rigging I Rigging history, principles and blocks. Rigging safety. Fabric and wire rope, steal chain, sockets, slings, rigging hardware. Slicing techniques. Reewing systems and personnel requirements. Requisites: Apprentice status or permission of the Apprenticeship Coordinator.</td>
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<tr>
<th>(ITS) COMPUTER FOUNDATIONS</th>
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<tr>
<td>ISP108B 36 Clock Hours</td>
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<tr>
<td>Keyboarding II This keyboarding skills course teaches students to use the computer keyboard to enter letters, numbers, and symbols. If students are already experienced typists, they will learn to type faster and more accurately (25 WPM @ 98% accuracy). Prerequisites: None.</td>
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<th>(ITS) INFORMATION TECHNOLOGY SECURITY</th>
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<td>ITS240 Lect + Lab 3 Credits 4 Periods</td>
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<tr>
<td>Ethical Hacking and Network Defense Preparation for the EC-Council Certified Ethical Hacking examination. In-depth exploration of how to effectively protect computer networks from risks ranging from malicious infiltration to cyber-warfare. Includes examination of ethical hacking, relevant tools and methodologies, and its importance to network security. Resources to identify new computer network vulnerabilities and counter security strategies will be discussed as well as an overview of relevant computer crime laws and penalties. Prerequisites: A grade of C or better in ITS110, or CNT205, or CNT270, or CNT271DB, or CNT272DB, or permission of Instructor.</td>
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<th>(MAT) MATHEMATICS</th>
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<td>MAT052 Lecture 3 Credits 3 Periods</td>
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<td>Basic Arithmetic Primary emphasis on conceptual understanding of and solving problems involving whole numbers, integers, mathematical operations, decimals, decimal operations, fractions, percentages, angles and geometric figures. Use of systems of measure, similarity, proportionality and the Pythagorean theorem. Focus on mathematical language, connections, patterns and reasoning, and additive and multiplicative reasoning. Student may receive credit for only one of the following: MAT051 and MAT052 and MAT053 and MAT054, or MAT081, or MAT082. Prerequisites: Satisfactory score on district placement exam.</td>
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| MAT085 Lecture 5 Credits 5 Periods  |
| Basic Arithmetic/College Mathematics Prep Primary emphasis on conceptual understanding of and solving problems involving whole numbers, integers, mathematical operations, decimals, decimal operations, fractions, percentages, angles and geometric figures. Use of systems of measure, similarity, proportionality and the Pythagorean theorem. Focus on mathematical language, connections, patterns and reasoning, and additive and multiplicative reasoning. Prerequisites: None.  |

| MAT1092 Lecture 3 Credits 3 Periods  |
| Introductory Algebra Emphasis on meaning related to variable, equality, inequality, equivalence. The use of additive and multiplicative reasoning in solving linear equations and inequalities in one variable. Validation of solution(s) through a reasonable mathematical defense. Transfer and apply knowledge through a process of sense making and reasonableness in mathematical problems and practical application situations. Recognize patterns and organize data to represent situations where output is related to input. Understand the concept of function and be able to represent functions in multiple ways, including tables, algebraic rules, graphs and contextual situations, and make connections among these representations. Read, represent, and interpret linear function relationships numerically, analytically, graphically and verbally and connect the different representations. Model and solve real-world problems involving three variables. Student may receive credit for only one of the following: MAT055 and MAT056 and MAT057, or MAT090, or MAT091, or MAT092. Prerequisites: An appropriate diagnostic score, or a grade of C or better in each of the following courses: MAT051, MAT052, and MAT053 or (an appropriate mathematics placement score, OR a grade of C or better for MAT081 or MAT082).  |

| MAT1112 Lecture 3 Credits 3 Periods  |
| Mathematical Concepts and Applications A problem solving approach to mathematics as it applies to real-life situations. Development, use and communication of mathematical concepts and applications that relate to measurement, percentage, practical geometry, statistics, finance, and unit conversions. Prerequisites: An appropriate mathematics placement score, OR a grade of C or better for MAT090, or MAT091, or MAT092, or (an appropriate diagnostic score, or a grade of C or better in each of the following courses: MAT055, MAT056, and MAT057).  |

| MAT1122 Lecture 3 Credits 3 Periods  |
| Intermediate Algebra Analysis of rational, radical, quadratic and exponential equations, functions and applications; graphs of radical, quadratic and exponential functions; operations on polynomial, rational, and radical expressions. Students may receive credit for only one of the following: MAT120, MAT121, or MAT122. Prerequisites: An appropriate mathematics placement score, OR a grade of B or better for MAT090, or MAT091, or MAT092, OR an appropriate diagnostic score, or a grade of B or better in each of the following courses: MAT055, MAT056, and MAT057.  |

| MAT1214 Lecture 6 Credits 6 Periods  |
| Intermediate Algebra with Review Analysis of rational, radical, quadratic and exponential equations, functions and applications; graphs of radical, quadratic and exponential functions; operations on polynomial, rational, and radical expressions. Students may receive credit for only one of the following: MAT120, MAT121, MAT122, or MAT126. This course is designed for students that do not qualify for MAT120, MAT121, MAT122, but intend to complete MAT15+ College Algebra for their degree path. Review of MAT08+ Basic Arithmetic and/or MAT09+ Introductory Algebra as needed. Prerequisites: None.  |

| MAT1214 Lecture 3 Credits 3 Periods  |
| College Mathematics SUN# MAT1142  |
| College-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include set theory, probability, statistics, finance, and geometry. Students may receive credit for only one of the following: MAT140, or MAT141, or MAT142. Prerequisites: An appropriate district placement, or a grade of C or better in MAT055 and MAT056 and MAT057, or MAT085, or MAT09+.  |

| MAT145 Lecture 5 Credits 5 Periods  |
| College Mathematics with Review Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include set theory, probability, statistics, finance, and geometry. MAT145 students may receive credit for only one of the following: MAT140, OR MAT141, OR MAT142, OR MAT143, OR MAT144. This course is designed for students that do not qualify for MAT140 or MAT141 or MAT142, but intend to complete MAT14+ College Mathematics for their degree path. Review of MAT08+ Basic Arithmetic and MAT09+ Introductory Algebra as needed. Prerequisites: A grade of C or better in each of the following courses: (MAT051 and MAT052 and MAT053), OR a grade of C or better in MAT081 or MAT082, OR an appropriate district placement, OR permission of Department/Division Chair.  |
MAT085        Lecture 5 Credits 5 Periods
Basic Arithmetic/College Mathematics Prep
Primary emphasis on conceptual understanding of and solving problems involving whole numbers, integers, mathematical operations, decimals, decimal operations, fractions, percentages, angles and geometric figures. Use of systems of measure, similarity, proportionality and the Pythagorean theorem. Focus on mathematical language, connections, patterns and reasoning, and additive and multiplicative reasoning. Prerequisites: None.

MAT092        Lecture 3 Credits 3 Periods
Introductory Algebra
Emphasis on meanings related to variable, equality, inequality, equivalence. The use of additive and multiplicative reasoning in solving linear equations and inequalities in one variable. Validation of solution(s) through a reasonable mathematical defense. Transfer and apply knowledge through a process of sense making and reasonableness in mathematical problems and practical application situations. Recognize patterns and organize data to represent situations where output is related to input. Understand the concept of function and be able to represent functions in multiple ways, including tables, algebraic rules, graphs and contextual situations, and make connections among these representations. Read, represent, and interpret linear function relationships numerically, analytically, graphically and verbally and connect the different representations. Model and solve real-world problems involving the concept of function. Student may receive credit for only one of the following: MAT055 and MAT056 and MAT057, or MAT090, or MAT091, or MAT092. Prerequisites: An appropriate diagnostic score, or a grade of C or better in each of the following courses: MAT051, MAT052, and MAT053 OR (an appropriate mathematics placement score, or a grade of C or better for MAT081 or MAT082).

MAT112        Lecture 3 Credits 3 Periods
Mathematical Concepts and Applications
A problem solving approach to mathematics as it applies to real-life situations. Development, use and communication of mathematical concepts and applications that relate to measurement, percentage, practical geometry, statistics, finance, and unit conversions. Prerequisites: An appropriate mathematics placement score, OR a grade of C or better for MAT090, or MAT091, or MAT092, OR (an appropriate diagnostic score, or a grade of C or better in each of the following courses: MAT055, MAT056, and MAT057).

MAT122        Lecture 3 Credits 3 Periods
Intermediate Algebra
Analysis of rational, radical, quadratic and exponential equations, functions and applications; graphs of radical, quadratic and exponential functions; operations on polynomial, rational, and radical expressions. Students may receive credit for only one of the following: MAT120, MAT121, or MAT122. Prerequisites: An appropriate mathematics placement score, OR a grade of B or better for MAT090, or MAT091, or MAT092, OR (an appropriate diagnostic score, or a grade of B or better in each of the following courses: MAT055, MAT056, and MAT057).

MAT126        Lecture 6 Credits 6 Periods
Intermediate Algebra with Review
Analysis of rational, radical, quadratic and exponential equations, functions and applications; graphs of radical, quadratic and exponential functions; operations on polynomial, rational, and radical expressions. Students may receive credit for only one of the following: MAT120, MAT121, MAT122, or MAT126. This course is designed for students that do not qualify for MAT120, MAT121, MAT122, but intend to complete MAT15+ College Algebra for their degree path. Review of MAT08+ Basic Arithmetic and/or MAT09+ Introductory Algebra as needed. Prerequisites: None.

MAT142        Lecture 3 Credits 3 Periods
College Mathematics
SUN# MAT1142
College-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include set theory, probability, statistics, finance, and geometry. Students may receive credit for only one of the following: MAT140, MAT141, or MAT142. Prerequisites: An appropriate district placement, or a grade of C or better in MAT055 and MAT056 and MAT057, or MAT085, or MAT095. College Mathematics with Review
Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include set theory, probability, statistics, finance, and geometry. MAT145 students may receive credit for only one of the following: MAT140, OR MAT141, OR MAT142, OR MAT145, OR MAT146. This course is designed for students that do not qualify for MAT140 or MAT141 or MAT142, but intend to complete MAT1+ College Mathematics for their degree path. Review of MAT08+ Basic Arithmetic and MAT09+ Introductory Algebra as needed. Prerequisites: A grade of C or better in each of the following courses: MAT051 and MAT052 and MAT053, OR a grade of C or better in MAT081 or MAT082, OR an appropriate district placement, OR permission of Department/Division Chair.
MAT146  Lecture 6 Credits 6 Periods  
College Mathematics with Review  
Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include set theory, probability, statistics, finance, and geometry. Students may receive credit for only one of the following: MAT140, MAT141, MAT142, MAT145 or MAT146. This course is designed for students that do not qualify for MAT140, or MAT141, or MAT142. Review of MAT0+ Basic Arithmetic and/or MAT09+ Introductory Algebra as needed. Prerequisites: None.

MAT150  Lecture 5 Credits 5 Periods  
College Algebra/Functions  
Analysis and interpretation of the behavior and nature of functions including polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, using multiple methods including matrices, modeling and solving real world problems, and defining and illustrating sequences and series. May receive credit for only one of the following: MAT150, MAT151, MAT152, or MAT187. General Education Designation: Mathematics - [MA] in combination with: MAT182. Prerequisites: A grade of "C" or better in MAT120, or MAT121, or MAT122, or satisfactory score on District placement exam.

MAT151  Lecture 4 Credits 4 Periods  
College Algebra/Functions  
SUN# MAT151  
Analysis and interpretation of the behavior and nature of functions including polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, using multiple methods including matrices, modeling and solving real world problems, and defining and illustrating sequences and series. May receive credit for only one of the following: MAT150, MAT151, MAT152, or MAT187. General Education Designation: Mathematics - [MA] in combination with: MAT182. Prerequisites: A grade of C or better in MAT120, or MAT121, or MAT122, or satisfactory score on District placement exam.

MAT182  Lecture 3 Credits 3 Periods  
Plane Trigonometry  
A study of measures of angles, properties of graphs of trigonometric functions, fundamental identities, addition and half-angle formulas, inverse trigonometric functions, solutions of trigonometric equations, complex numbers and properties of triangle solution. Students may receive credit for only one of the following: MAT182 or MAT187. Prerequisites: Grade of C or better in MAT150, or MAT151, or MAT152, or equivalent, or concurrent registration in MAT150, or MAT151, or MAT152 or satisfactory score on District placement exam.

MAT187  Lecture 5 Credits 5 Periods  
Precalculus  
SUN# MAT187  
A precalculus course combining topics from college algebra and trigonometry. Preparation for analytic geometry and calculus. May receive credit for only one of the following: MAT150, MAT151, MAT152, or MAT187. Prerequisites: Grade of B or better in MAT120, or MAT121, or MAT122, or equivalent, or satisfactory score on a placement test.

MAT206  Lecture 3 Credits 3 Periods  
Elements of Statistics  
SUN# MAT1160  
Basic concepts and applications of statistics, including data description, estimation and hypothesis tests. Prerequisites: A grade of C or better in MAT14+, or MAT15+, or MAT187, or equivalent, or satisfactory District placement, or permission of Department or Division Chair.

MAT213  Lecture 4 Credits 4 Periods  
Brief Calculus  
Introduction to the theory, techniques, and applications of the differential and integral calculus of functions with problems related to business, life, and the social sciences. Students may receive credit for only one of the following: MAT212 or MAT213. Prerequisites: Grade of C or better in MAT150, or MAT151, or MAT152, or MAT187, or appropriate Math placement test score.

MAT217  Lecture 3 Credits 3 Periods  
Mathematical Analysis for Business  
An introduction to the mathematics required for the study of business. Includes multivariable optimization, Lagrange multipliers, linear programming, linear algebra, probability, random variables, discrete and continuous distributions. Prerequisites: Grade of C or better in MAT212 or MAT213.

MAT220  Lecture 5 Credits 5 Periods  
Calculus with Analytic Geometry I  
SUN# MAT2220  
Limits, continuity, differential and integral calculus of functions of one variable. Students may receive credit for only one of the following: MAT220 or MAT221. Prerequisites: Grade of C or better in [MAT182 and (MAT150, MAT151 or MAT152)], or MAT187, or appropriate Math placement test score.

MAT225  Lecture 3 Credits 3 Periods  
Elementary Linear Algebra  
Introduction to matrices, systems of linear equations, determinants, vector spaces, linear transformations and eigenvalues. Emphasizes the development of computational skills. Prerequisites: Grade of C or better in MAT212 or MAT220, or MAT221, or equivalent.

MAT230  Lecture 5 Credits 5 Periods  
Calculus with Analytic Geometry II  
SUN# MAT2230  
Techniques of integration for both proper and improper integrals with applications to the physical and social sciences, elements of analytic geometry, and the analysis of sequences and series. Students may receive credit for only one of the following: MAT230 or MAT231. Prerequisites: Grade of C or better in MAT220 or MAT221 or equivalent.

MAT240  Lecture 5 Credits 5 Periods  
Calculus with Analytic Geometry III  
Multivariate calculus including vectors, vector-valued functions, partial differentiation, multiple integration and an introduction to vector fields. Students may receive credit for only one of the following: MAT240 or MAT241. Prerequisites: Grade of C or better in MAT230 or MAT231.

MAT256  Lecture 4 Credits 4 Periods  
Investigating Quantity: Number, Operations and Numeration Systems  
Explore number, numeration systems and operations on numbers. Techniques of problem solving with an emphasis on exploring a variety of strategies. Use a variety of visualization techniques to develop a conceptual understanding of these topics. MAT256 is designed to meet requirements for prospective elementary education teachers. Prerequisites: A grade of C or better in [MAT150 or MAT151 or MAT152 or higher], OR A grade of C or better in [MAT120 or MAT121 or MAT122 & (MAT140 or MAT141 or MAT142 or higher)], OR A grade of C or better in [MAT140 or MAT141 or MAT142 and satisfactory score on District placement exam to permit enrollment in (MAT150 or MAT151 or MAT152 or higher)].

MAT257  Lecture 4 Credits 4 Periods  
Investigating Geometry, Probability and Statistics  
Explores geometry, measurement, probability and statistics. Uses visualization, technologies, problem solving, reasoning and proof to develop a conceptual understanding of these topics. MAT257 is designed to meet the requirements for prospective elementary education teachers. Prerequisites: A grade of C or better in MAT256 or permission of Instructor.

MAT276  Lecture 4 Credits 4 Periods  
Modern Differential Equations  
Introduces differential equations, theoretical and practical solution techniques with applications. Problem solving using MATLAB. Prerequisites: Grade of C or better in MAT230 or MAT231 or permission of Department or Division.
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<th>Course Listings 2019-2020</th>
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<td><strong>MAT146</strong> Lecture 6 Credits 6 Periods</td>
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<td><strong>College Mathematics with Review</strong></td>
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<td>Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include set theory, probability, statistics, finance, and geometry. Students may receive credit for only one of the following: MAT140, MAT141, MAT142, MAT145 or MAT146. This course is designed for students who do not qualify for MAT140 or MAT141, or MAT142. Review of MAT09--Basic Arithmetic and/or MAT091 Introductory Algebra as needed. Prerequisites: None.</td>
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<td><strong>College Algebra/Functions</strong></td>
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<td>Analysis and interpretation of the behavior and nature of functions including polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, using multiple methods including matrices, modeling and solving real world problems, and defining and illustrating sequences and series. May receive credit for only one of the following: MAT150, MAT151, MAT152, or MAT187. General Education Designation: Mathematics - [MA] in combination with: MAT182. Prerequisites: A grade of &quot;C&quot; or better in MAT120, or MAT121, or MAT122, or satisfactory score on District placement exam.</td>
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<td><strong>MAT187</strong> Lecture 5 Credits 5 Periods</td>
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<td><strong>Precalculus SUN# MAT1187</strong></td>
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<td>A precalculus course combining topics from college algebra and trigonometry. Preparation for analytic geometry and calculus. May receive credit for only one of the following: MAT150, MAT151, MAT152, or MAT187. Prerequisites: Grade of B or better in MAT120, or MAT121, or MAT122, or equivalent, or satisfactory score on a placement test.</td>
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<td><strong>MAT206</strong> Lecture 3 Credits 3 Periods</td>
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<td><strong>Elements of Statistics SUN# MAT1160</strong></td>
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<td>Basic concepts and applications of statistics, including data description, estimation and hypothesis tests. Prerequisites: A grade of C or better in MAT14+, or MAT15+, or MAT187, or equivalent, or satisfactory District placement, or permission of Department or Division Chair.</td>
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<td>Limits, continuity, differential and integral calculus of functions of one variable. Students may receive credit for only one of the following: MAT220 or MAT221. Prerequisites: Grade of C or better in [MAT182 and (MAT150 or MAT151 or MAT152)], or MAT187, or appropriate Math placement test score.</td>
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<td><strong>Calculus with Analytic Geometry II SUN# MAT2230</strong></td>
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<td>Techniques of integration for both proper and improper integrals with applications to the physical and social sciences, elements of analytic geometry, and the analysis of sequences and series. Students may receive credit for only one of the following: MAT230 or MAT231. Prerequisites: Grade of C or better in MAT220 or MAT221 or equivalent.</td>
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<td><strong>MAT240</strong> Lecture 5 Credits 5 Periods</td>
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<tr>
<td><strong>Calculus with Analytic Geometry III</strong></td>
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<td>Multivariate calculus including vectors, vector-valued functions, partial differentiation, multiple integration and an introduction to vector fields. Student may receive credit for only one of the following: MAT240 or MAT241. Prerequisites: Grade of C or better in MAT230 or MAT231.</td>
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<td>Explore number, numeration systems and operations on numbers. Techniques of problem solving with an emphasis on exploring a variety of strategies. Use a variety of visualization techniques to develop a conceptual understanding of these topics. MAT256 is designed to meet requirements for prospective elementary education teachers. Prerequisites: A grade of C or better in (MAT150 or MAT151 or MAT152 or higher), OR A grade of C or better in (MAT120 or MAT121 or MAT122 AND (MAT140 or MAT141 or MAT142 or higher)), OR A grade of C or better in (MAT140 or MAT141 or MAT142 AND satisfactory score on District placement exam to permit enrollment in (MAT150 or MAT151 or MAT152 or higher)).</td>
</tr>
<tr>
<td><strong>MAT257</strong> Lecture 4 Credits 4 Periods</td>
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<tr>
<td><strong>Investigating Geometry, Probability and Statistics</strong></td>
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<td>Explores geometry, measurement, probability and statistics. Uses visualization, technologies, problem solving, reasoning and proof to develop a conceptual understanding of these topics. MAT257 is designed to meet the requirements for prospective elementary education teachers. Prerequisites: A grade of C or better in MAT256 or permission of Instructor.</td>
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<tr>
<td><strong>MAT276</strong> Lecture 4 Credits 4 Periods</td>
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<tr>
<td><strong>Modern Differential Equations</strong></td>
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<tr>
<td>Introduces differential equations, theoretical and practical solution techniques with applications. Problem solving using MATLAB. Prerequisites: Grade of C or better in MAT230 or MAT231 or permission of Department or Division.</td>
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Course Listings 2019-2020

(MBC) MEDICAL BILLING AND CODING

MBC100 324 Clock Hours
Fundamentals of Medical Billing and Coding
Fundamentals in health care delivery, including career and labor market information, medical law and patients' rights, as well as health care worker responsibilities. Personal wellness covers nutrition, stress management, and exercise. Occupational Safety and Health Administration (OSHA) standards and facility safety. Communication skills focus on teamwork in the health care setting, personal communications skills, and intercultural communication strategies. Medical terminology for health care workers uses a body systems approach to terms relating to structure and function. Medical terms are analyzed and built based on term parts, such as root words, suffixes, and prefixes; abbreviations are included. Clinical pathophysiology includes causes of disease and the impact on the human body. Diagnosis and treatment of diseases covers procedures and diagnostic tests. Pharmacology for allied health professionals covers chemical, generic, and trade or brand names of drugs. Routes of administration, regulations, classifications and categories of schedule drugs are covered, as well as abbreviations and symbols used in relation to drug administration and prescriptions. This course serves as a prerequisite for MBC110, MBC120, MBC130, and MBC140. Prerequisites: Admission into the Medical Billing and Coding program.

MBC110 110 Clock Hours
Medical Billing
The introduction to medical billing and reimbursement focuses on an overview of the medical billing profession. Claims processing and billing guidelines are covered. Study of the major third-party payers, military carriers, as well as Medicare and Medicaid. Focuses on correct billing practices. Included are types of coverage offered, eligibility, and reimbursement methodologies. Actual medical claims processing with accuracy is learned for patients in the non-hospital setting. Management of claims to ensure confidentiality, data retention, and successful payment for services. This class serves as a prerequisite for MBC140. Prerequisites: MBC100.

MBC120 296 Clock Hours
Medical Coding
ICD-10 diagnostic coding using the International Classification of Diseases, 10th revision, clinical modification. Use of appropriate guidelines and federal, state, and local compliance standards for coding diagnoses. Application of diagnostic codes for outpatient and ambulatory coding assignment. Introduction to current procedural terminology (CPT) from both facility and physician perspectives. General content, coding guidelines, and the role in healthcare reimbursement are covered. Coding of basic medical and surgical services including the use of modifiers. In-depth exposure to CPT coding, reimbursement trends, guidelines, and coding from physician documentation. Application of current evaluation and management documentation guidelines. Emphasis on surgical and diagnostic procedures. Appropriate assignment of CPT and healthcare common procedural coding system (HCPCS). This class serves as a prerequisite for MBC130 and MBC140. Prerequisites: MBC100.

MBC130 45 Clock Hours
Examination Review
Extensive, hands-on coding that prepares the student to register and sit for the national CPC (Certified Professional Coder) exam offered through the American Academy of Professional Coders (AAPC) to obtain certification for a medical coding career in an outpatient facility. Review of fundamental coding skills for an outpatient setting and knowledge and expertise in reviewing and assigning the correct ICD-10-CM, CPT, and HCPCS codes. Test-taking techniques are included to optimize examination preparation. Timed practice exams are included in this course to simulate the actual CPC examination. The outcome will help the student determine his or her readiness for the national certification exam. Prerequisites: MBC100 and MBC120.

MBC140 30 Clock Hours
Computers in Medical Billing and Coding
Health record documentation for allied health professionals is an introduction to computer applications in health care settings. Students will use a simulation of an electronic health record (EHR) for billing, coding entry, and patient accounts. A basic review of federal, state, and organizational documentation guidelines is included, as well as legal and ethical issues applicable to health information documentation and coding practices. Prerequisites: MBC100, MBC110, MBC120, and MBC130 or permission of Program Director.

Course Listings 2019-2020

(MCP) MEAT CUTTING

MCP100 170 Clock Hours
Basics of Meat Cutting
Shop safety and sanitation, proper use of power and hand tools, equipment setup, breakdown, and cleanup, safe lifting techniques, and customer service. Prerequisites: None.

MCP101 184 Clock Hours
Intro to Meat Helper
Introduction to the retail meat environment, weight conversions, meat processing, inventory control, basic knife skills, packaging, stocking, and merchandising skills. Emphasis on accuracy, quality, and productivity. Prerequisites: None.

MCP103 225 Clock Hours
Meat Fabrication
Identification and processing cuts of meat, basic anatomy, with emphasis on accuracy, quality, productivity, sales, and customer relationships. Mastery of skills in processing cuts of meat, including specialized cuts of meats, with emphasis on accuracy, quality, productivity, retail, sales, and customer service. Prerequisites: None.

MCP104 225 Clock Hours
Merchandising
Learn to identify, cut, wrap, weigh, and display all retail cuts for meat case. Topics include organization, sanitation, meat labels/tags and customer service. Prerequisites: None.

(MDC) MEDICAL ASSISTING

MDC100 105 Clock Hours
Medical Assisting Fundamentals
Overview of current health care professions Health care delivery systems, third party payers, and facility ownership. Health organization structure, patient rights and quality care. Health care and life values. Definition and importance of values, ethics, and essential behaviors in the workplace. Occupational Safety and Health Administration (OSHA) standard precautions and facility safety. Basic communication skills which facilitate teamwork in the health care setting. Focus on development of personal communication skills and an understanding of how effective communication skills promote teamwork. Focus on intercultural communication strategies. Medical terminology used in health care, with special care populations and in special services. Body systems approach to terms related to structures, functions, diseases, procedures, and diagnostic tests. Building and analyzing terms using word parts. Spelling of medical abbreviations, symbols, and terminology. Prerequisites: Admission into the Medical Assistant program.

MDC102 215 Clock Hours
Medical Assisting Front Office
Application of basic pathophysiology and psychology of body systems as they relate to an entry-level health care professional's role. Principles and procedures for front office administrative skills. Application of insurance, coding and billing. Introduction to the electronic health record in the physician's office. Principles and procedures in using an office automated computerized system for entering patient information and tracking patient billing. Health Insurance Portability and Accountability Act (HIPAA) regulations, and security measures for electronic health records (EHR). Students must successfully pass ALL of the psychomotor and affective competencies in order to pass the course and/or progress in the program. Prerequisites: MDC100.
(MBC) MEDICAL BILLING AND CODING

MBC100 324 Clock Hours  
**Fundamentals of Medical Billing and Coding**  
Fundamentals in health care delivery, including career and labor market information, medical law and patients’ rights, as well as health care worker responsibilities. Personal wellness covers nutrition, stress management, and exercise. Occupational Safety and Health Administration (OSHA) standards and facility safety. Communication skills focus on teamwork in the health care setting, personal communications skills, and intercultural communication strategies. Medical terminology for health care workers uses a body systems approach to terms relating to structure and function. Medical terms are analyzed and built based on term parts, such as root words, suffixes, and prefixes; abbreviations are included. Clinical pathophysiology includes causes of disease and the impact on the human body. Diagnosis and treatment of diseases covers procedures and diagnostic tests. Pharmacology for allied health professionals covers chemical, generic, and trade or brand names of drugs. Routes of administration, regulations, classifications and categories of schedule drugs are covered, as well as abbreviations and symbols used in relation to drug administration and prescriptions. This course serves as a prerequisite for MBC110, MBC120, MBC130, and MBC140. Prerequisites: Admission into the Medical Billing and Coding program.

MBC110 110 Clock Hours  
**Medical Billing**  
The introduction to medical billing and reimbursement focuses on an overview of the medical billing profession. Claims processing and billing guidelines are covered. Study of the major third-party payers, military carriers, as well as Medicare and Medicaid. Focuses on correct billing practices. Included are types of coverage offered, eligibility, and reimbursement methodologies. Actual medical claims processing with accuracy is learned for patients in the non-hospital setting. Management of claims to ensure confidentiality, data retention, and successful payment for services. This class serves as a prerequisite for MBC140. Prerequisites: MBC100.

MBC120 296 Clock Hours  
**Medical Coding**  
ICD-10 diagnostic coding using the International Classification of Diseases, 10th revision, clinical modification. Use of appropriate guidelines and federal, state, and local compliance standards for coding diagnoses. Application of diagnostic codes for outpatient and ambulatory coding assignment. Introduction to current procedural terminology (CPT) from both facility and physician perspectives. General content, coding guidelines, and the role in healthcare reimbursement are covered. Coding of basic medical and surgical services including the use of modifiers. In-depth exposure to CPT coding, reimbursement trends, guidelines, and coding from physician documentation. Application of current evaluation and management documentation guidelines. Emphasis on surgical and diagnostic procedures. Appropriate assignment of CPT and healthcare common procedural coding system (HCPCS). This class serves as a prerequisite for MBC130 and MBC140. Prerequisites: MBC100.

MBC130 45 Clock Hours  
**Examination Review**  
Extensive, hands-on coding that prepares the student to register and sit for the national CPC (Certified Professional Coder) exam offered through the American Academy of Professional Coders (AAPC) to obtain certification for a medical coding career in an outpatient facility. Review of fundamental coding skills for an outpatient setting and knowledge and expertise in reviewing and assigning the correct ICD-10-CM, CPT, and HCPCS codes. Test-taking techniques are included to optimize examination preparation. Timed practice exams are included in this course to simulate the actual CPC examination. The outcome will help the student determine his or her readiness for the national certification exam. Prerequisites: MBC100 and MBC120.

MBC140 30 Clock Hours  
**Computers in Medical Billing and Coding**  
Health record documentation for allied health professionals is an introduction to computer applications in health care settings. Students will use a simulation of an electronic health record (EHR) for billing, coding entry, and patient accounts. A basic review of federal, state, and organizational documentation guidelines is included, as well as legal and ethical issues applicable to health information documentation and coding practices. Prerequisites: MBC100, MBC110, MBC120, and MBC130 or permission of Program Director.

(MCP) MEAT CUTTING

MCP101 170 Clock Hours  
**Basics of Meat Cutting**  
Shop safety and sanitation, proper use of power and hand tools, equipment setup, breakdown, and cleanup, safe lifting techniques, and customer service. Prerequisites: None.

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Identification and processing cuts of meat, basic anatomy, with emphasis on accuracy, quality, productivity, sales, and customer relationships. Mastery of skills in processing cuts of meat, including specialized cuts of meats, with emphasis on accuracy, quality, productivity, retail, sales, and customer service. Prerequisites: None.

MCP104 225 Clock Hours  
**Merchandising**  
Learn to identify, cut, wrap, weigh, and display all retail cuts for meat case. Topics include organization, sanitation, meat labels/tags and customer service. Prerequisites: None.

(MDC) MEDICAL ASSISTING

MDC100 105 Clock Hours  
**Medical Assisting Fundamentals**  
Overview of current health care professions Health care delivery systems, third party payers, and facility ownership. Health organization structure, patient rights and quality care. Health care and life values. Definition and importance of values, ethics, and essential behaviors in the workplace. Occupational Safety and Health Administration (OSHA) standards precaution, and facility safety. Basic communication skills which facilitate teamwork in the health care setting. Focus on development of personal communication skills and an understanding of how effective communication skills promote teamwork. Focus on intercultural communication strategies. Medical terminology used in health care, with special care populations and in special services. Body systems approach to terms related to structures, functions, diseases, procedures, and diagnostic tests. Building and analyzing terms using word parts. Spelling of medical abbreviations, symbols, and terminology. Prerequisites: Admission into the Medical Assistant program.

MDC102 215 Clock Hours  
**Medical Assisting Front Office**  
Application of basic pathophysiology and psychology of body systems as they relate to an entry-level health care professional’s role. Principles and procedures for front office administrative skills. Application of insurance, coding and billing. Introduction to the electronic health record in the physician’s office. Principles and procedures in using an office automated computerized system for entering patient information and tracking patient billing. Health Insurance Portability and Accountability Act (HIPAA) regulations, and security measures for electronic health records (EHR). Students must successfully pass ALL of the psychomotor and affective competencies in order to pass the course and/or progress in the program. Prerequisites: MDC100.
MDC103 105 Clock Hours  
**Introduction to Medical Assisting**  
This course develops the foundation of healthcare through an understanding of anatomy and physiology, medical terminology and application of basic pathophysiology as it relates to an entry-level medical assisting. Medical terminology as it related to structures, functions, diseases, procedures, and diagnostic testing. Building and analyzing terms using word parts. Medical abbreviations, symbols and correct spelling and pronunciation. Basic First Aid and emergency preparedness. Professionalism in healthcare to ensure students are ready to enter the professional workplace including etiquette, image, manners, communication, professional relationships, responsibility and accountability, respectfulness, patient privacy. Empathy, compassion and emotional maturity specific to the healthcare setting. Prerequisite: Admission into the Medical Assistant program.

MDC104 215 Clock Hours  
**Fundamentals of Administrative Medical Assisting**  
Overview of the daily operations, principles and procedures for administrative skills including, medical record management, application of insurance, coding and billing. Introduction to the electronic health record in the physician’s office. Basic administrative office policies, procedures, appointment scheduling, telephone etiquette, patient reception, financial practices, third party payers, health insurance and basic understanding of medical billing and coding. Health organization structure, patient rights and quality care. Definition and importance of values, basic understanding of medical law and ethics. Focus on development of personal and professional communication skills and an understanding of how effective communication skills promote teamwork. Additional focus on intercultural communication strategies. Prerequisite: MDC100 or MDC103.

MDC105 95 Clock Hours  
**Fundamentals of Clinical Medical Assisting I**  
Overview of the daily operations, principles and procedures for clinical skills including, compliance with Occupational Safety and Health Administration (OSHA), the Centers for Disease Control and Prevention (CDC), and Clinical Laboratory Improvement Amendments (CLIA). Participate in mock exposure events and unsafe working conditions. Facility safety, protective practices, safety symbols, labels, signs and proper use of safety equipment. Infection control practices including, proper disposal of biohazardous materials and sharps, aseptic handwashing, appropriate application of personal protective equipment (PPE), blood borne pathogens, fomites, chain of infection, setting up and maintaining a sterile field, surgical instruments,滿意於 sterilization, sterile techniques, and application of sterilization. Definition, application and importance of performing vital signs accurately (blood pressure, pulse, respirations, temperature, pulse oximetry, height and weight). Basic understanding of the fundamental concepts of nutrition and diet as it relates to human health and disease. Prerequisites: MDC102 or MDC104.

MDC106 255 Clock Hours  
**Fundamentals of Clinical Medical Assisting II**  
Enter-level training to professionally perform, process, and explain the Electrocardiogram (EGK) and Spirometry. Principles and procedures for administering parenteral medications (injections) and application of basic dosage calculations. Basic overview of various medical specialties, including: Pediatrics, Obstetrics and Gynecology, Dermatology etc. Methods of assisting clinicians with physical examinations, procedures, treatments, patient education and minor surgical procedures in specialty medical offices. Basic Point-of-Care testing in a clinical setting. Specimen collection and handling. Practice of basic phlebotomy and application of fundamental phlebotomy techniques in a clinical laboratory setting or health care environment. Prerequisites: MDC105 or MDC110.

MDC110 188 Clock Hours  
**Medical Assisting Back Office I**  
Fundamentals of microbial control. Methods of identification and response to emergencies in a medical office. Basic point-of-care testing in a clinical setting. Specimen collection and handling. Practice of basic phlebotomy and application of fundamental phlebotomy techniques in a clinical laboratory setting or health care environment. Compliance with Occupational Safety and Health Administration (OSHA), the United States Centers for Disease Control and Prevention (CDC), and Clinical Laboratory Improvement Amendments (CLIA). Prerequisites: MDC102.

MET109 Lec + Lab 3 Credits 4 Periods  
**Machine Trades Print Reading**  
Analysis and interpretation of technical drawings (prints) common to manufacturing. Types of print formats, line types, and view projections. Mathematical calculations for determining dimensions. Symbols and features present on prints. Introduction to Geometric Dimensioning and Tolerancing (GD&T) as it relates to prints. Prerequisites: Math assessment score on District placement exam into MAT090 or MAT091 or MAT092 or higher or permission of Department or Division.

MET112 Lec + Lab 3 Credits 5 Periods  
**Inspection Techniques**  
Set-up and use of inspection tools, equipment, per industry standards including the use of surface plates, right angle blocks, cylindrical squares, V-blocks, and related equipment. Selection, completion and interpretation of information from inspection forms. Inspection alternatives, tool control activities, and application of geometric dimensioning and tolerance. Prerequisites: A grade of C or better in all Prerequisites. (Math assessment score on District placement exam into MAT090 or MAT091 or MAT092 or higher or permission of Department or Division. Prerequisites or Corequisites: MET109.

MET113 Lec + Lab 3 Credits 5 Periods  
**Applied Geometric Dimensioning and Tolerancing**  
Terminology and application of symbols, modifiers, and datum relationships specific to geometric dimensioning and tolerance (GDT) in prints and solid models using the Y14.5-2009 Standard. Use of geometric controls to document design intent and demonstrate the application of material condition modifiers through the use of simulation/SolidWorks application. Incorporation of SolidWorks to demonstrate and evaluate the correctness of GDT applied to manufacturing, quality, and verification processes. Prerequisites: A grade of C or better in MET109 and MET112, or permission of Department or Division.

MET206 Lec + Lab 3 Credits 4 Periods  
**CNC Programming**  
CNC programming of word address language (G&M code) for computer numerical control (CNC) machine tools. 2, 3 and 4-Axis CNC programming for CNC controlled machines. Computer based tool path verification, CNC controller tool path verification and CNC machine tool program verification. Study of tooling, speeds, feeds and material removal as related to CNC machine tools and CNC controlled machines. Prerequisites: A grade of C or better in MET231 or machine shop experience or permission of Program Director.
MDC103 105 Clock Hours
Introduction to Medical Assisting
This course develops the foundation of healthcare through an understanding of anatomy and physiology, medical terminology and application of basic pathophysiology as it relates to an entry-level medical assisting. Medical terminology as it relates to structures, functions, diseases, procedures, and diagnostic testing. Building and analyzing terms using word parts. Medical abbreviations, symbols and correct spelling and pronunciation. Basic First Aid and emergency preparedness. Professionalism in healthcare to ensure students are ready to enter the professional workplace including etiquette, image, manners, communication, professional relationships, responsibility and accountability, respectfulness, patient privacy. Empathy, compassion and emotional maturity specific to the healthcare setting. Prerequisite: Admission into the Medical Assistant program.

MDC104 215 Clock Hours
Fundamentals of Administrative Medical Assisting
Overview of the daily operations, principles and procedures for administrative skills including, medical record management, application of insurance, coding and billing. Introduction to the electronic health record in the physician’s office. Basic administrative office policies, procedures, appointment scheduling, telephone etiquette, patient reception, financial practices, third party payers, health insurance and basic understanding of medical billing and coding. Health organization structure, patient rights and quality care. Definition and importance of values, basic understanding of medical law and ethics. Focus on development of personal and professional communication skills and an understanding of how effective communication skills promote teamwork. Additional focus on intercultural communication strategies. Prerequisite: MDC100 or MDC103.

MDC105 95 Clock Hours
Fundamentals of Clinical Medical Assisting I
Overview of the daily operations, principles and procedures for clinical skills including, compliance with Occupational Safety and Health Administration (OSHA), the Centers for Disease Control and Prevention (CDC), and Clinical Laboratory Improvement Amendments (CLIA). Participate in mock exposure events and unsafe working conditions. Facility safety, protective practices, safety symbols, labels, signs and proper use of safety equipment. Infection control practices including, proper disposal of biohazardous materials and sharps, aseptic handwashing, appropriate application of personal protective equipment (PPE), blood borne pathogens, fomites, chain of infection, set up and maintaining a sterile field, surgical instrumentation, sterilization, sterile techniques, and application of sterilization. Definition, application and importance of performing vital signs accurately (Blood pressure, pulse, respirations, temperature, pulse oximetry, height and weight) Basic understanding of the fundamental concepts of nutrition and diet as it relates to human health and disease. Prerequisites: MDC102 or MDC104.

MDC106 255 Clock Hours
Fundamentals of Clinical Medical Assisting II
Entry-level training to professionally perform, process, and explain the Electrocardiogram (EKG) and Spirometry. Principles and procedures for administering parenteral medications (injections) and application of basic dosage calculations. Basic overview of various medical specialties, including: Pediatrics, Obstetrics and Gynecology, Dermatology etc. Methods of assisting clinicians with physical examinations, procedures, treatments, patient education and minor surgical procedures in specialty medical offices. Basic Point-of-Care testing in a clinical setting. Specimen collection and handling. Practice of basic phlebotomy and application of fundamental phlebotomy techniques in a clinical laboratory setting or health care environment. Prerequisites: MDC105 or MDC110.

MDC110 188 Clock Hours
Medical Assisting Back Office I
Fundamentals of microbial control. Methods of identification and response to emergencies in a medical office. Basic point-of-care testing in a clinical setting. Specimen collection and handling. Practice of basic phlebotomy and application of fundamental phlebotomy techniques in a clinical laboratory setting or health care environment. Compliance with Occupational Safety and Health Administration (OSHA), the United States Centers for Disease Control and Prevention (CDC), and Clinical Laboratory Improvement Amendments (CLIA). Prerequisites: MDC102.
MET207  Lec + Lab  3 Credits  3 Periods  
CNC Mill: Operator Training I
Computer numerical control (CNC) mill. Qualified setup and functioning program. Mill operations. Changing tool values. Replacing and qualifying tooling. CNC mill operator training including machine controls, tooling and operations. Proper machine shop safety. Prerequisites: A grade of C or better required in all Prerequisites. Prerequisites: MET231 or permission of Program Director. Prerequisites or Corequisites: GTC/MET206 or permission of Program Director.

MET208  Lec + Lab  3 Credits  3 Periods  
CNC Lathe: Operator Training I
Computer numerical control (CNC) lathe qualified setup and functioning program. Operation of lathe. Changing tool values. Replacing and qualifying tooling. CNC lathe operator training including machine controls, tooling and operations. Proper machine shop safety. Prerequisites: A grade of C or better required in all Prerequisites. Prerequisites: MET231 or permission of Program Director. Prerequisites or Corequisites: GTC/MET206 or permission of Program Director.

MET215  Lec + Lab  3 Credits  5 Periods  
Advanced CNC Operation
Setup and operation of a computer numerical control (CNC) machining center. Manufacturing operation instructions and functioning programming. Changing tool values. Replacing and qualifying tooling. Advanced CNC topics including production tooling and coolants, live tooling (millturn), tail stock, bar pull/feed, advanced program editing, canned cycle use and manipulation, set up time reduction, advanced machine control manipulation, communication techniques, and fixtureing concepts. Proper machine shop safety. Prerequisites: A grade of C or better in MET207, or MET208, or permission of instructor.

MET220  Lec + Lab  3 Credits  4 Periods  
Fundamentals of Coordinating Measuring Machines (CMM)
Fundamentals and general aspects of coordinate measuring machines (CMM). Basic measuring techniques and operation, including conformance to geometric dimensioning and tolerancing requirements using both manual and programmable (automatic) coordinate measuring machines. Prerequisites: A grade of C or better in MET112 and MET113.

MET231  Lec + Lab  3 Credits  5 Periods  
Manufacturing Processes and Materials
Basic machining operations related to drilling, milling, grinding, and lathe processes. Development of fundamental skills, practices and safety in working with machine tools, measurement instruments, and related equipment common to manufacturing. Theoretical and practical experiences related to the machining of plastics, ferrous and nonferrous metals. Laboratory projects and inspection sheets for each project. Prerequisites: A grade of C or better in all Prerequisites. Prerequisites: (Math assessment score on District placement exam into MAT090 or MAT091 or MAT092 or higher) and MET101 or MET140 or permission of Department or Division. Prerequisites or Corequisites: MET215.

MET236AD  Lec + Lab  3 Credits  5 Periods  
CAD/CAM Computer Numerical Control (CNC) Programming: MasterCam
Computer programming of two-dimensional (2-1/2 axis) computer numerical control (CNC) machines. Tool path generation for CNC mill, lathe, wire electrical discharge machine (EDM), router, laser, waterjet and hybrid CNC machine tools. Tool path geometry creation, importation and modification. Cutting parameters selection including tool geometry, speeds, feeds and tool path optimization. Tool path simulation for material removal verification with solid and wireframe graphics. Word address (G-code) CNC tool code production and output verification on FANUC and HAAS based machine tools. Prerequisites: A grade of C or better in GTC/MET206 or permission of Program Director.

Course Listings 2019-2020

MET246AD  Lec + Lab  3 Credits  5 Periods  
Advanced CAD/CAM CNC Programming: MasterCam
Computer programming of three-dimensional (3D) (3 and 4-axis simultaneous) computer numerical control (CNC) machines. Tool path generation for CNC mill, lathe, wire EDM, router, laser, waterjet and hybrid CNC machine tools. Tool path geometry creation, importation and modification. Cutting parameters selection and control, including tool geometry, speeds, feeds and tool path optimization. Tool path simulation for material removal verification with solid and wireframe graphics. Produce word address (G-code) CNC tool code production and output verification on FANUC and HAAS based machine tools. Prerequisites: A grade of C or better in MET236AD.

MET260  Lecture  3 Credits  3 Periods  
Tooling and Fixturing
Various types of jigs and fixtures and their function as related to numerically controlled (NC) machines. Clamping and workholding principles and also use of common jigs and fixture hardware. Prerequisites: A grade of C or better in MET111 and MET140 or permission of Department or Division.

MET266AD  Lec + Lab  3 Credits  5 Periods  
Solids CAD/CAM Programming: MasterCam
Solid modeling of parts, molds and fixtures using integrated solids; hybrid modeling of solids, surfaces and wireframe for computer numerical control (CNC) part production. Computer aided drafting to computer aided manufacturing (CAD/CAM) system integration with solid model feature recognition and history tree management. Boolean addition, subtraction, and volume calculations between solids and surfaces. Prerequisites: A grade of C or better in MET246AD or permission of Instructor.

MET286AE Lec + Lab  3 Credits  5 Periods  
Solid Design I: Part Modeling: Solid Works
Basic concepts of solid model mechanical design. Feature-based parametric modeling for mechanical design and technical documentation. Creation of technical documents of mechanical parts and assemblies per the American Society of Mechanical Engineers (ASME) Y14 standard. Prerequisites: A grade of C or better in MET215 or permission of Instructor.

MET288AE  Lec + Lab  3 Credits  5 Periods  
Solid Design II: Advanced Part Modeling: SolidWorks
Hardware and software components of the SolidWorks system and their function. Advanced features utilized in the design of solids. Skill enhancement in the creation of advanced assemblies and part design. Use of specific tools in the design of complex surfaces. Hands-on applications with SolidWorks system. Prerequisites: A grade of C or better in MET288AE or permission of Instructor.

MET289AE Lec + Lab  3 Credits  5 Periods  
Solid Design III: Detailing/GD&T: SolidWorks
Fundamentals of drafting. Creation of engineering drawings. Parts and assemblies using associative mechanical design software. Principles and applications presented in accordance with the American Society of Mechanical Engineers (ASME) Y14 series of standards. Drawing sheets and settings, views and projections, dimensions and annotations, geometric dimensioning and tolerancing (GD&T), assembly drawings, templates, bill of material, configurations and tables. Prerequisites: A grade of C or better in MET289AE or permission of Instructor.

MET290AE Lec + Lab  3 Credits  5 Periods  
Solid Design IV: Assembly and Kinematics: SolidWorks
Assembly modeling of mechanical design. Use of top-down and bottom-up technique to product development. Introduction to kinematics; linear and rotary motors, linear springs and gravity. Introduction to finite element analysis (FEA) using COSMOS tools for the discussion of stress analysis, gap/contact analysis, and best practices. Analysis of features and assemblies using COSMOSWorks in the SolidWorks environment. Prerequisites: A grade of C or better in MET289AE or permission of Instructor.
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**MET207**  
Lec + Lab  3 Credits  3 Periods  
CNC Mill: Operator Training I  
Computational numerical control (CNC) mill. Qualified setup and functioning program. Mill operations. Changing tool values. Replacing and qualifying tooling. CNC mill operator training including machine controls, tooling and operations. Proper machine shop safety. Prerequisites: A grade of C or better required in all Prerequisites. Prerequisites: MET231 or permission of Program Director. Prerequisites or Corequisites: GTC/MET206 or permission of Program Director.

**MET208**  
Lec + Lab  3 Credits  3 Periods  
CNC Lathe: Operator Training I  
Computer numerical control (CNC) lathe qualified setup and functioning program. Operation of lathe. Changing tool values. Replacing and qualifying tooling. CNC lathe operator training including machine controls, tooling and operations. Proper machine shop safety. Prerequisites: A grade of C or better required in all Prerequisites. Prerequisites: MET231 or permission of Program Director. Prerequisites or Corequisites: GTC/MET206 or permission of Program Director.

**MET215**  
Lec + Lab  3 Credits  5 Periods  
Advanced CNC Operation  
Setup and operation of a computer numerical control (CNC) machining center. Manufacturing operation instructions and functioning programming. Changing tool values. Replacing and qualifying tooling. Advanced CNC topics including production tooling and coolants, live tooling (mill/turn), tool stock, bar feed/fixture, advanced program editing, canned cycle use and manipulation, set up time reduction, advanced machine control manipulation, communication techniques, and fixtureing concepts. Proper machine shop safety. Prerequisites: A grade of C or better in MET207, or MET208, or permission of Instructor.

**MET220**  
Lec + Lab  3 Credits  4 Periods  
Fundamentals of Coordinate Measuring Machines (CMM)  
Fundamentals and general aspects of coordinate measuring machines (CMM). Basic measuring techniques and operation, including conformance to geometric dimensioning and tolerancing requirements using both manual and programmable (automatic) coordinate measuring machines. Prerequisites: A grade of C or better in MET112 and MET113.

**MET231**  
Lec + Lab  3 Credits  5 Periods  
Manufacturing Processes and Materials  
Basic machining operations related to drilling, milling, grinding, and lathe processes. Development of fundamental skills, practices and safety in working with machine tools, measurement instruments, and related equipment common to manufacturing. Theoretical and practical experiences related to the manufacturing of plastics, ferrous and nonferrous metals. Laboratory projects and inspection sheets for each project. Prerequisites: A grade of C or better required in all Prerequisites. Prerequisites: (Math assessment score on District placement exam into MAT090 or MAT091 or MAT092 or higher) and MET112, or permission of Department or Division. Prerequisites or Corequisites: MET113.

**MET236AD**  
Lec + Lab  3 Credits  5 Periods  
CAD/CAM Computer Numerical Control (CNC) Programming: MasterCam  
Computer programming of two-dimensional (2-1/2 axis) computer numerical control (CNC) machines. Tool path generation for CNC mill, lathe, wire electrical discharge machine (EDM), router, laser, waterjet and hybrid CNC machine tools. Tool path geometry creation, importation and modification. Cutting parameters selection including tool geometry, speeds, feeds and tool path optimization. Tool path simulation for material removal verification with solid and wireframe graphics. Word address (G-code) CNC tool code production and output verification on FANUC and HAAS based machine tools. Prerequisites: A grade of C or better in GTC/MET206 or permission of Program Director.

**MET246AD**  
Lec + Lab  3 Credits  5 Periods  
Advanced CAD/CAM CNC Programming: MasterCam  
Computer programming of three-dimensional (3D) (3 and 4-axis simultaneous) computer numerical control (CNC) machines. Tool path generation for CNC mill, lathe, wire EDM, router, laser, waterjet and hybrid CNC machine tools. Tool path geometry creation, importation and modification. Cutting parameters selection and control, including tool geometry, speeds, feeds and tool path optimization. Tool path simulation for material removal verification with solid and wireframe graphics. Produce word address (G-code) CNC tool code production and output verification on FANUC and HAAS based machine tools. Prerequisites: A grade of C or better in MET236AD.

**MET260**  
Lecture  3 Credits  3 Periods  
Tooling and Fixturing  
Various types of jigs and fixtures and their function as related to numerically controlled (NC) machines. Clamping and workholding principles and also use of common jigs and fixture hardware. Prerequisites: A grade of C or better in MET111 and MET140 or permission of Department or Division.

**MET266AD**  
Lec + Lab  3 Credits  5 Periods  
Solids CAD/CAM Programming: MasterCam  
Solid modeling of parts, molds and fixtures using integrated solids; hybrid modeling of solids, surfaces and wireframe for computer numerical control (CNC) part production. Computer aided drafting to computer aided manufacturing (CAD/CAM) system integration with solid model feature recognition and history tree management. Boolean addition, subtraction, and volume calculations between solids and surfaces. Prerequisites: A grade of C or better in MET246AD or permission of Instructor.

**MET286AE**  
Lec + Lab  3 Credits  5 Periods  
Solid Design I: Part Modeling: Solid Works  
Basic concepts of solid model mechanical design. Feature-based parametric modeling for mechanical design and technical documentation. Creation of technical documents of mechanical parts and assemblies per the American Society of Mechanical Engineers (ASME) Y14 standards. Prerequisites: A grade of C or better in MET109 or permission of Instructor.

**MET288AE**  
Lec + Lab  3 Credits  5 Periods  
Solid Design II: Advanced Part Modeling: SolidWorks  
Hardware and software components of the SolidWorks system and their function. Advanced features utilized in the design of solids. Skill enhancement in the creation of advanced assemblies and part design. Use of specific tools in the design of complex surfaces. Hands-on applications with SolidWorks system. Prerequisites: A grade of C or better in MET286AE or permission of Instructor.

**MET289AE**  
Lec + Lab  3 Credits  5 Periods  
Solid Design III: Detailing/GD&T: SolidWorks  
Fundamentals of drafting, Creation of engineering drawings. Parts and assemblies using associative mechanical design software. Principles and applications presented in accordance with the American Society of Mechanical Engineers (ASME) Y14 series of standards. Drawing sheets and settings, views and projections, dimensions and annotations, geometric dimensioning and tolerancing (GD&T), assembly drawings, templates, bill of material, configurations and tables. Prerequisites: A grade of C or better in MET288AE or permission of Instructor.

**MET290AE**  
Lec + Lab  3 Credits  5 Periods  
Solid Design IV: Assembly and Kinematics: SolidWorks  
Assembly modeling of mechanical design. Use of top-down and bottom-up technique to product development. Introduction to kinematics; linear and rotary motors, linear springs and gravity. Introduction to finite element analysis (FEA) using COSMOS tools for the discussion of stress analysis, gap/contact analysis, and best practices. Analysis of features and assemblies using COSMOSWorks in the SolidWorks environment. Prerequisites: A grade of C or better in MET289AE or permission of Instructor.

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| **Overview of the foundations of supervision and how to get things done within an organization through other people.** The Techniques of Supervision (MGT) MANAGEMENT  
Assembly design. Use of top-down and bottom-up technique for product development. Creation of assembly drawings for parts and assemblies using associative mechanical design software. Motion study and fitment analysis of assembly model applying techniques of additive manufacturing. Application of kinematics, linear and rotary motors, springs gravity and contact mechanisms to validate 3D print model. 3D printing using various additive manufacturing materials including acrylonitrile butadiene styrene (ABS), polyactic acid (PLA) and nylon. Prerequisites: A grade of C or better in MET113 and MET288AE, or permission of Instructor. | **Course Listings 2019-2020** |
| **Practical training and application of healthcare interpreting under direct supervision of clinical or hospital preceptor.** This course introduces the field of interpreting, interpretation models, cognitive processes associated with interpretation, professional ethics, legal issues, code of ethics, standards of practice, interpretation, interpreter assessments, and protocol associated with various settings. Upon completion, students should be able to interpret English/Spanish and Spanish/English. Students also participate in activities to prepare for externships, including a review of professional conduct, dress code, bilingual customer service and downtime activities. Prerequisites: MIC101 (within three years). | **Management and Leadership I**  
Covers management concepts and applications for business, industry, and government organizations. Prerequisites: None. |
| **Medical and Clinical Development**  
Basic anatomy and physiology, medical terminology in Spanish & English for health care settings. Emphasis on pronunciation of commonly used medical abbreviations for medical specialists and branches of medicine. Students will analyze, define and correctly spell medical terms and abbreviations. Systems to be covered are: cardiovascular, respiratory, digestive, musculoskeletal, genitourinary, endocrine, immune, and nervous. Common test procedures for each system, cancer and first response interpretation roles will also be covered. Students also participate in activities to prepare for externships, including a review of professional conduct, dress code, bilingual customer service and downtime activities. Prerequisites: MIC101 and MIC103 (within three years). | **Medical Interpreter: Professional Externship**  
Studying medical terminology in Spanish & English for healthcare settings. Emphasis on pronunciation of commonly used medical abbreviations for medical specialists and branches of medicine. Students will analyze, define and correctly spell medical terms and abbreviations. Systems to be covered are: cardiovascular, respiratory, digestive, musculoskeletal, genitourinary, endocrine, immune, and nervous. Common test procedures for each system, cancer and first response interpretation roles will also be covered. Students also participate in activities to prepare for externships, including a review of professional conduct, dress code, bilingual customer service and downtime activities. Prerequisites: MIC101 and MIC103 (within three years). |
Overview of the foundations of supervision and how to get things done within an organization through other people. The course focuses on the development of supervision skills and strategies for effective leadership. Prerequisites: Permission of Instructor.

**MGT101 Lecture** 3 Credits 3 Periods

**Personnel/Human Resources Management**

Human resource planning, staffing, training, compensating, and appraising employees in labor management relationships. Prerequisites: None. MGT101 or MGT175 or MGT229 suggested but not required.

**MGT276 Lecture** 3 Credits 3 Periods

**Management and Leadership I**

Covers management concepts and applications for business, industry, and government organizations. Prerequisites: None.

**MGT229 Lecture** 3 Credits 3 Periods

**Personnel/Human Resources Management**

Human resource planning, staffing, training, compensating, and appraising employees in labor management relationships. Prerequisites: None. MGT101 or MGT175 or MGT229 suggested but not required.

**MGT276 Lecture** 3 Credits 3 Periods

**Management and Leadership I**

Covers management concepts and applications for business, industry, and government organizations. Prerequisites: None.

**MGT229 Lecture** 3 Credits 3 Periods

**Personnel/Human Resources Management**

Human resource planning, staffing, training, compensating, and appraising employees in labor management relationships. Prerequisites: None. MGT101 or MGT175 or MGT229 suggested but not required.
MST) MICROSOFT TECHNOLOGY
MST150SV Lec + Lab 3 Credits 4 Periods
Microsoft Windows 7 Configuration
Knowledge and skills necessary to perform installation and day-to-day administration and support of the Microsoft Windows 7 operating system. Preparation for the Microsoft certification examination. Prerequisites: None. CIS190, or CNT140AA, or MST140 suggested but not required.

MST150WT Lec + Lab 3 Credits 4 Periods
Installing and Configuring Microsoft Windows 10
In-depth exploration of how to effectively install and configure Windows 10. Includes features of Windows 10, virtualization improvements, network connectivity, access to resources, monitor and maintain Windows clients and backup and recovery. Designed to prepare students for the Microsoft Windows 10 certification examination. Prerequisites: None. CIS190, or CNT140AA, or MST140 suggested but not required.

(MTO) PRECISION MACHINING
MTO106 144 Clock Hours
Machining Fundamentals and Geometric Dimensioning & Tolerancing
Introduction to machining, industrial safety, basic print reading and interpretation, applications and use of measuring equipment, inspection techniques, introduction to geometric dimensioning and tolerancing (GD&T), shop applied mathematics, machine and cutting tool selection and applications, material identification and handling, machine maintenance fundamentals. Prerequisites: None.

MTO107 102 Clock Hours
Bench Work, Layout and Drill Press Operations
Learn about common bench work and layout techniques related to pre and post setup and machining operations, basics of job planning, machine safety protocols, tool selection, hole-making operations, hand and machine tool operations, speeds/feeds theory and inspection techniques for holes and threads. Learn basic drilling operations and related hole-making techniques. Prerequisites: None.

MTO119 108 Clock Hours
Manual Mill Operations
Learn the basic components and operations of a vertical manual milling machine. Learn cutting tool selection and applications for milling. Gain knowledge in basic surface grinding operations. Prerequisites: None.

MTO121 150 Clock Hours
Manual Lathe Operations
Learn the basic components and operations of a manual turning machine. Learn cutting tool selection and applications for basic turning operations. Gain knowledge in basic surface grinding operations. Prerequisites: None.

MTO132 150 Clock Hours
CNC Mill Programming and Operations
Learn basic computer numerical control (CNC) milling machines concepts, programming, and operations. Prerequisites: None.

MTO140 150 Clock Hours
CNC Lathe Programming and Operations
Learn basic computer numerical control (CNC) lathe machining concepts, programming, and operations. Learn basic concepts of computer-aided design and computer-aided manufacturing (CAD/CAM). Prerequisites: None.

(NCE) NURSING: CONTINUING EDUCATION
NCE103 Lecture 2 Credits 2 Periods
Psychiatric Technician Overview
Students learn to care for patients with a wide variety of mental illness to include anxiety, mood, personality and psychotic disorders, as well as post-traumatic stress syndrome and behavioral issues. Psychiatric technicians follow physician/nurse instructions and hospital procedures. Identification of modalities to monitor patient's mental and emotional status, physical symptoms related to mental disorders, and recognition of medication side effects. A variety of therapies will be covered to include rehabilitation and treatment programs, as well as recreational activities used as treatment options. Prerequisites: None.

NCE131 Lecture 0.5 Credits 0.5 Periods
Recognizing Skin Rashes in the School Aged Child
Recognition of common childhood rashes, identify allergic rash manifestations, communicable rashes and infectious rashes. Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of instructor.

NCE150 Lecture 1 Credit 1 Period
Basic Certified Nursing Assistant
Prepares the advanced placement nursing assistant student for the Certified Nursing Assistant (CNA) certification or Licensed Nursing Assistant (LNA) examination. The student will care for clients across the wellness/illness continuum within the scope of practice of the CNA/LNA. Includes basic problem solving processes specific to meeting the basic and holistic needs of clients, therapeutic communication skills, as well as interventions to ensure the needs and safety of the client. Licensing is the exclusive responsibility of the Arizona State Board of Nursing. Prerequisites: One year full-time employment OR two years part-time employment of direct patient care within the past five years OR students who have successfully completed course work that included direct patient care experiences in allied health, medicine or nursing in the past five years, OR permission of the Division Chair. Corequisites: NCE151.

NCE151 Lab 1 Credit 3 Periods
Basic Certified Nursing Assistant Lab
Prepares the advanced placement nursing assistant student for the Certified Nursing Assistant (CNA) certification or Licensed Nursing Assistant (LNA) examination. The student will care for clients across the wellness/illness continuum within the scope of practice of the CNA/LNA. Demonstration of problem solving, professional behavior, therapeutic communication skills, and maintenance of a safe environment. Demonstration of caring behaviors and ensuring environmental safety for the client. Provides opportunity for the advanced placement student to show proficiency in the performance of basic nursing assistant skills and procedures through laboratory activities and participation in the care of clients. Licensing is the exclusive responsibility of the Arizona State Board of Nursing. Prerequisites: One year full-time employment OR two years part-time employment of direct patient care within the past five years OR students who have successfully completed course work that included direct patient care experiences in allied health, medicine or nursing in the past five years, OR permission of the Division Chair. Corequisites: NCE150.

NCE173 Lec 1 Credit / Lec 0.5 Periods / Lab 0 Credits Lab 24 Periods
Venipuncture
Development of clinical skills for venipuncture. Emphasis on review of anatomy and physiology of vasculature of the arm, medical asepsis, and procedure. Prerequisites: Permission of Instructor.

NCE201 Lecture 3 Credits 3 Periods
Physical Assessment
Basic health assessment by collecting health histories and performing physical examinations. Relationship of sciences and humanities to holistic aspects of health. Assessment for normal, variations of normal, and deviations from normal findings. Prerequisites: Current Practical Nurse (PN) or Registered Nurse (RN) license or permission of instructor.
Course Listings 2019-2020

(MST) MICROSOFT TECHNOLOGY

MST105SV  Lec + Lab  3 Credits  4 Periods
Microsoft Windows 7 Configuration
Knowledge and skills necessary to perform installation and day-to-day administration and support of the Microsoft Windows 7 operating system. Preparation for the Microsoft certification examination. Prerequisites: None. CIS190, or CNT140AA, or MST140 suggested but not required.

MST105WT  Lec + Lab  3 Credits  4 Periods
Installing and Configuring Microsoft Windows 10
In-depth exploration of how to effectively install and configure Windows 10. Includes features of Windows 10, virtualization improvements, network connectivity, access to resources, monitor and maintain Windows clients and backup and recovery. Designed to prepare students for the Microsoft Windows 10 certification examination. Prerequisites: None. CIS190, or CNT140AA, or MST140 suggested but not required.

(MTO) PRECISION MACHINING

MTO106  144 Clock Hours
Machining Fundamentals and Geometric Dimensioning & Tolerancing
Introduction to machining, industrial safety, basic print reading and interpretation, applications and use of measuring equipment, inspection techniques, introduction to geometric dimensioning and tolerancing (GD&T), shop applied mathematics, machine and cutting tool selections and applications, material identification and handling, machine maintenance fundamentals. Prerequisites: None.

MTO107  102 Clock Hours
Bench Work, Layout and Drill Press Operations
Learn about common bench work and layout techniques related to pre and post setup and machining operations, basics of job planning, machine safety protocols, tool selection, hole-making operations, hand and machine tool operations, speeds/feeds theory and inspection techniques for holes and threads. Learn basic drilling operations and related hole-making techniques. Prerequisites: None.

MTO119  108 Clock Hours
Manual Mill Operations
Learn the basic components and operations of a vertical manual milling machine. Learn cutting tool selection and applications for milling. Gain knowledge in basic surface grinding operations. Prerequisites: None.

MTO121  150 Clock Hours
Manual Lathe Operations
Learn the basic components and operations of a manual turning machine. Learn cutting tool selection and applications for basic turning operations. Gain knowledge in basic surface grinding operations. Prerequisites: None.

MTO132  150 Clock Hours
CNC Mill Programming and Operations
Learn basic computer numerical control (CNC) milling machines concepts, programming, and operations. Prerequisites: None.

MTO140  150 Clock Hours
CNC Lathe Programming and Operations
Learn basic computer numerical control (CNC) lathe machining concepts, programming, and operations. Learn basic concepts of computer-aided design and computer-aided manufacturing (CAD/CAM). Prerequisites: None.

(NCE) NURSING: CONTINUING EDUCATION

NCE102  Lecture  2 Credits  2 Periods
Psychiatric Technician Overview
Students learn to care for patients with a wide variety of mental illness to include anxiety, mood, personality and psychotic disorders, as well as post-traumatic stress syndrome and behavioral issues. Psychiatric technicians follow physician/nurse instructions and hospital procedures. Identification of modalities to monitor patient's mental and emotional status, physical symptoms related to mental disorders, and recognition of medication side effects. A variety of therapies will be covered to include rehabilitation and treatment programs, as well as recreational activities used as treatment options. Prerequisites: None.

NCE131  Lecture  0.5 Credits  0.5 Periods
Recognizing Skin Rashes in the School Aged Child
Recognition of common childhood rashes, identify allergic rash manifestations, communicable rashes and infectious rashes. Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of instructor.

NCE150  Lecture  1 Credit  1 Period
Basic Certified Nursing Assistant
Prepares the advanced placement nursing assistant student for the Certified Nursing Assistant (CNA) certification or Licensed Nursing Assistant (LNA) examination. The student will care for clients across the wellness/illness continuum within the scope of practice of the CNA/LNA. Includes basic problem solving processes specific to meeting the basic and holistic needs of clients, therapeutic communication skills, as well as interventions to ensure the needs and safety of the client. Licensing is the exclusive responsibility of the Arizona State Board of Nursing. Prerequisites: One year full-time employment OR two years part-time employment of direct patient care within the past five years OR students who have successfully completed course work that included direct patient care experiences in allied health, medicine or nursing in the past five years, OR permission of the Division Chair. Corequisites: NCE151.

NCE151  Lab  1 Credit  3 Periods
Basic Certified Nursing Assistant Lab
Prepares the advanced placement nursing assistant student for the Certified Nursing Assistant (CNA) certification or Licensed Nursing Assistant (LNA) examination. The student will care for clients across the wellness/illness continuum within the scope of practice of the CNA/LNA. Demonstration of problem solving, professional behavior, therapeutic communication skills, and maintenance of a safe environment. Demonstration of caring behaviors and ensuring environmental safety for the client. Provides opportunity for the advanced placement student to show proficiency in the performance of basic nursing assistant skills and procedures through laboratory activities and participation in the care of clients. Licensing is the exclusive responsibility of the Arizona State Board of Nursing. Prerequisites: One year full-time employment OR two years part-time employment of direct patient care within the past five years OR students who have successfully completed course work that included direct patient care experiences in allied health, medicine or nursing in the past five years, OR permission of the Division Chair. Corequisites: NCE150.

NCE173  Lec 1 Credit  /  Lec 0.5 Periods  /  Lab 0 Credits  Lab 24 Periods
Venipuncture
Development of clinical skills for venipuncture. Emphasis on review of anatomy and physiology of vasculature of the arm, medical asepsis, and procedure. Prerequisites: Permission of Instructor.

NCE201  Lecture  3 Credits  3 Periods
Physical Assessment
Basic health assessment by collecting health histories and performing physical examinations. Relationship of sciences and humanities to holistic aspects of health. Assessment for normal, variations of normal, and deviations from normal findings. Prerequisites: Current Practical Nurse (PN) or Registered Nurse (RN) license or permission of instructor.
Course Listings 2019-2020

NCE203 Lecture 0.5 Credits 0.5 Periods
Interpretation of Laboratory Diagnostic Examinations
Utilization of laboratory diagnostic examination results for evaluation of patient conditions. Normal results for selected body fluids. Abnormal results related to pathophysiological conditions of adults. Incorporation of results of examinations to assess, modify, and evaluate therapy for patients with specific conditions. Prerequisites: Registered Nurse or Licensed Practical Nurse, nursing students, or permission of Instructor.

NCE205 Lecture 4 Credits 4 Periods
Emergency Room Nursing
Roles of emergency health team. Medical/legal issues specific to emergency room care. Triage classifications for specific emergency room/department situations, nursing care for selected conditions, trauma, and disease processes. Organ donation issues, discharge procedures and client education. Prerequisites: Registered Nurse (RN), or Licensed Practical Nurse (LPN), or currently enrolled in a nursing program, or permission of instructor.

NCE210 Lecture 1 Credit 1 Period
School Nurse Emergency Assessment Skills
Update of emergency assessment in the school setting. Includes emergency assessment of seizures, asthma, head and neck injuries, heat-related problems, bites, stings, burns, and orthopedic injuries. Prerequisites: School nurse, school health aide, other health professionals or permission of the Instructor.

NCE214CA Lecture 1 Credit 1 Period
Basic Electrocardiogram Interpretation
Focuses on recognition of common cardiac rhythms. Includes major and minor reportable occurrences which affect a patient's status and priority interventions. Prerequisites: Permission of Instructor.

NCE214OP Lec + Lab 3 Credits 5 Periods
Orientation to Nursing Program
Overview of the philosophy, mission, vision, Nurse of the Future competencies, student learning outcomes, and the constructivist framework of the ManicipalNursing program. Student expected to be prepared with basic concepts of therapeutic communication, the nursing process, pharmacology, introductory concepts of intravenous therapy and knowledge of fundamental concepts. Primary content areas: nursing process, with emphasis on the use of the nursing process to develop a plan of care; utilization of critical thinking skills; problem-solving strategies, the communication process; psychiatric nursing competencies and role transition between LPN and RN scope of practice. NCE214OP designed for advanced placement students (i.e. transfer students, returning students, and/or Practical Nurses). Prerequisites: Designee/advanced placement into the Nursing program or permission of the Nursing Director.

NCE216AA Lecture 0.5 Credits 0.5 Periods
School Health Update: Assessment Skills
Assessment skills for the school health setting. Assessment and management of selected school health problems including abdominal pain, head and spinal cord injuries, and environmental hazards. NCE216AA may be repeated for a total of five (5) credit hours. Prerequisites: Registered Nurse, or Licensed Practical Nurse, or currently enrolled in a nursing program, or permission of Instructor.

NCE216ND Lecture 0.5 Credits 0.5 Periods
School Nurse Skills Update
Enhancement and reinforcement of specific skills encountered in the school health setting. Special needs of physically and emotionally disabled children. Review of special procedures and medications used with special children populations. NCE216ND may be repeated for a total of ten (10) credits. Prerequisites: Current school nurse or school health aide.

Course Listings 2019-2020

NCE221 Lec 3 Credits Lec 2.5 Periods / Lab 0 Credits Lab 24 Periods
Patient Care Technician Skills
Patient care technician skills and techniques which include: drawing blood, performing a variety of specimen collections, observing and reporting patient status, assisting in patient preparation and electrode placement for electrocardiograms, suspecting patients, performing urinary catheterizations, documentation and reporting of skill completion, maintaining patient confidentiality, and recognizing legal and ethical commitments related to patient care technician skills. Prerequisites: Certified Nurse Assistant (CNA), Nurse Assistant course or equivalent within the past year, and permission of Continuing Education Program Director and/or Instructor.

NCE223 Lec 2.5 Credits Lec 2.0 Periods / Lab 0 Credits Lab 1.5 Periods
LPN-IV Therapy and Medication Skills
Terminology and anatomy related to intravenous therapy. Drug response factors, dosage, calculations, intravenous site dressing change, intravenous administration equipment, and initiating intravenous therapy. Documentation and procedures for laboratory check lists. Meets state nursing board requirements for initiating intravenous therapy and administrating intravenous medications. Prerequisites: Current license as Practical Nurse or permission of Instructor.

NCE249 Lecture 4 Credits 4 Periods
Basic Critical Care Nursing
Foundation in basic critical care for nurses who are new or interested in entering the critical care environment. Including anatomy, physiology, and pharmacology. Disease management for the following systems: cardiac, respiratory, neuroscience, gastrointestinal, renal, endocrine and hematology, hemodynamics and ventilator management. Requisites: Current license as Registered Nurse or Practical Nurse or recent graduate of an accredited nursing program or permission of Instructor.

NCE251 Lecture 3 Credits 3 Periods
Telemetry Nursing
Cardiac anatomy and physiology and the conduction system. Elements of a cardiac assessment. Recognition of arrhythmia and cardiac abnormalities seen on electrocardiogram (EKG). Indications for temporary and permanent pacing. Drug groups and their interactions specific to the cardiac patient. Normal and abnormal lab values for the cardiac patient. Pre and post-procedure care for cardiac procedures. Nursing interventions and emergency treatment. Prerequisites: Registered Nurse (RN) and a grade of C or better in NCE214CA or equivalent.

NCE259 Lecture 4 Credits 4 Periods
Advanced Critical Care Nursing
Provides the experienced critical care nurse with an opportunity to build on basic critical care knowledge. Advanced concepts in assessment, hemodynamic monitoring, pathophysiology of disease processes, and use of the nursing process for critically ill patients with complex, multisystem disorders. Designed to help prepare experienced critical care nurses for the certification examination for critical care nursing offered by the American Association of Critical Care Nurses. Prerequisites: A grade of C or better in NCE249, or Registered Nurse working in critical care, or permission of Instructor.

NCE265 Lecture 0.5 Credits 0.5 Periods
Triage Skills for Urgent Care Staff
Identificatoin of high-risk aspects of frequent medical complaints. Instruction in avoiding errors when triaging patients in the urgent care setting. Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.

NCE266 Lecture 0.5 Credits 0.5 Periods
Recognition and Management of the Patient with Allergies
Allergy process, types of allergies and their presentations, levels and types of reactions, as well as treatment, diagnostic testing and prevention strategies. Prerequisites: Health care professional, or permission of Department or Division.
Course Listings  2019-2020

NCE203 Lecture 0.5 Credits 0.5 Periods
Interpretation of Laboratory Diagnostic Examinations
Utilization of laboratory diagnostic examination results for evaluation of patient conditions. Normal results for selected body fluids. Abnormal results related to pathophysiological conditions of adults. Incorporation of results of examinations to assess, modify, and evaluate therapy for patients with specific conditions. Prerequisites: Registered Nurse or Licensed Practical Nurse, nursing students, or permission of Instructor.

NCE205 Lecture 4 Credits 4 Periods
Emergency Room Nursing
Roles of emergency health team. Medical/legal issues specific to emergency room care. Triage classifications for specific emergency room/department situations, nursing care for selected conditions, trauma, and disease processes. Organ donation issues, discharge procedures and client education. Prerequisites: Registered Nurse (RN), or Licensed Practical Nurse (LPN), or currently enrolled in a nursing program, or permission of instructor.

NCE210 Lecture 1 Credit 1 Period
School Nurse Emergency Assessment Skills
Update of emergency assessment in the school setting. Includes emergency assessment of seizures, asthma, head and neck injuries, heat-related problems, bites, stings, burns, and orthopedic injuries. Prerequisites: School nurse, school health aide, other health professionals or permission of the Instructor.

NCE214CA Lecture 1 Credit 1 Period
Basic Electrocardiogram Interpretation
Focuses on recognition of common cardiac rhythms. Includes major and minor reportable occurrences which affect a patient's status and priority interventions. Prerequisites: Permission of Instructor.

NCE214OP Lec + Lab 3 Credits 5 Periods
Orientation to Nursing Program
Overview of the philosophy, mission, vision, Nurse of the Future competencies, student learning outcomes, and the constructivist framework of the ManicipateNursing program. Student expected to be prepared with basic concepts of therapeutic communication, the nursing process, pharmacology, introductory concepts of intravenous therapy and knowledge of fundamental concepts. Primary content areas: nursing process, with emphasis on the use of the nursing process to develop a plan of care; utilization of critical thinking skills; problem-solving strategies, the communication process; psychiatric nursing competencies and role transition between LPN and RN scope of practice. NCE214OP designed for advanced placement students (i.e. transfer students, returning students, and/or Practical Nurses). Prerequisites: Designee/advanced placement into the Nursing program or permission of the Nursing Director.

NCE216AA Lecture 0.5 Credits 0.5 Periods
School Health Update: Assessment Skills
Assessment skills for the school health setting. Assessment and management of selected school health problems including abdominal pain, head and spinal cord injuries, and environmental hazards. NCE216AA may be repeated for a total of five (5) credit hours. Prerequisites: Registered Nurse, or Licensed Practical Nurse, or currently enrolled in a nursing program, or permission of Instructor.

NCE216ND Lecture 0.5 Credits 0.5 Periods
School Nurse Skills Update
Enhancement and reinforcement of specific skills encountered in the school health setting. Special needs of physically and emotionally disabled children. Review of special procedures and medications used with special children populations. NCE216ND may be repeated for a total of ten (10) credits. Prerequisites: Current school nurse or school health aide.

Course Listings  2019-2020

NCE221 Lec 3 Credits Lec 2.5 Periods / Lab 0 Credits Lab 24 Periods
Patient Care Technician Skills
Patient care technician skills and techniques which include: drawing blood, performing a variety of specimen collections, observing and reporting patient status, assisting in patient preparation and electrode placement for electrocardiograms, suctioning patients, performing urinary catheterizations, documentation and reporting of skill completion, maintaining patient confidentiality, and recognizing legal and ethical commitments related to patient care technician skills. Prerequisites: Certified Nurse Assistant (CNA), Nurse Assistant course or equivalent within the past year, and permission of Continuing Education Program Director and/or Instructor.

NCE223 Lec 2.5 Credits Lec 2.0 Periods / Lab 0 Credits Lab 1.5 Periods
LPN-IV Therapy and Medication Skills
Terminology and anatomy related to intravenous therapy. Drug response factors, dosage, calculations, intravenous site dressing change, intravenous administration equipment, and initiating intravenous therapy. Documentation and procedures for laboratory check lists. Meets state nursing board requirements for initiating intravenous therapy and administrating intravenous medications. Prerequisites: Current license as Practical Nurse or permission of Instructor.

NCE249 Lecture 4 Credits 4 Periods
Basic Critical Care Nursing
Foundation in basic critical care for nurses who are new or interested in entering the critical care environment. Including anatomy, physiology, and pharmacology. Disease management for the following systems: cardiac, respiratory, neuroscience, gastrointestinal, renal, endocrine and hematology, hemodynamics and ventilator management. Requisites: Current license as Registered Nurse or Practical Nurse or recent graduate of an accredited nursing program or permission of Instructor.

NCE251 Lecture 3 Credits 3 Periods
Telemetry Nursing
Cardiac anatomy and physiology and the conduction system. Elements of a cardiac assessment. Recognition of arrhythmia and cardiac abnormalities seen on electrocardiogram (EKG). Indications for temporary and permanent pacing. Drug groups and their interactions specific to the cardiac patient. Normal and abnormal lab values for the cardiac patient. Pre and post-procedure care for cardiac procedures. Nursing interventions and emergency treatment. Prerequisites: Registered Nurse (RN) and a grade of C or better in NCE214CA or equivalent.

NCE259 Lecture 4 Credits 4 Periods
Advanced Critical Care Nursing
Provides the experienced critical care nurse with an opportunity to build on basic critical care knowledge. Advanced concepts in assessment, hemodynamic monitoring, pathophysiology of disease processes, and use of the nursing process for critically ill patients with complex, multisystem disorders. Designed to help prepare experienced critical care nurses for the certification examination for critical care nursing offered by the American Association of Critical Care Nurses. Prerequisites: A grade of C or better in NCE249, or Registered Nurse working in critical care, or permission of Instructor.

NCE265 Lecture 0.5 Credits 0.5 Periods
Triage Skills for Urgent Care Staff
Identification of high-risk aspects of frequent medical complaints. Instruction in avoiding errors when triaging patients in the urgent care setting. Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.

NCE266 Lecture 0.5 Credits 0.5 Periods
Recognition and Management of the Patient with Allergies
Allergy process, types of allergies and their presentations, levels and types of reactions, as well as treatment, diagnostic testing and prevention strategies. Prerequisites: Health care professional, or permission of Department or Division.
NCE271 Lecture 0.5 Credits 0.5 Periods
Pediatric Diabetes
Provides an overview of diabetes in the pediatric population. Epidemiology and etiology, types of diabetes in children and symptom recognition, medication and diet management, complications, new technological devices, and family interventions. Prerequisites: Current Arizona Registered Nurse (RN) license or Licensed Practical Nurse (LPN) license or permission of Instructor.

(NUC) NUCLEAR MEDICINE TECHNOLOGY
NUC100 Lecture 1 Credit 1 Period
Introduction to Nuclear Medicine Technology
Role of the Nuclear Medicine Technologist. Job duties, responsibilities, working conditions and work environments in the inpatient clinical settings. Certification and licensing requirements for the Nuclear Medicine Technologist, shadowing experience specific to the nuclear medicine department. Prerequisites: None.

NUC101 Lecture 1 Credit 1 Period
Essentials of Nuclear Medicine Technology
Introduction to the essential information required for the nuclear medicine program. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC103 Lec + Lab 1 Credit 3 Periods
Nuclear Medicine Image Evaluation I
Evaluation of images related to clinical situations and procedures. Demonstration of technical skills. Peer-reviewed literature. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC108 Lecture 1 Credit 3 Periods
Structured Diagnostic Medical Imaging Skills Enhancement
Structured diagnostic imaging cognitive learning and imaging study skills to help students achieve success in their respective imaging courses. Diagnostic medical imaging learning process and critical thinking application skills emphasized in coordination with the level of matriculation. NUC108 may be repeated four (4) times for a total of four (4) credits. Prerequisites: None. Corequisites: Enrolled in Diagnostic Medical Imaging Program (Medical Radiography, Nuclear Medicine Technology, and Diagnostic Medical Ultrasound) or permission of Program Director. Cross-References: DMI108.

NUC110 Lecture 3 Credits 3 Periods
Introduction to Radiation Physics and Biology for Nuclear Medicine
Atomic structure, types of radiation, radiation biology, and radiation protection. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC112 Lab 1 Credit 3 Periods
Nuclear Medicine Quality Control Laboratory
Introduction to the nuclear medicine laboratory rules and equipment. Quality control procedures, laboratory, and radiation safety. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC113 Lab 1 Credit 3 Periods
Nuclear Medicine Clinical Applications Laboratory
Establishing competencies by demonstration of nuclear medicine imaging and non-imaging procedures including quality control. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC114 Lecture 3 Credits 3 Periods
Nuclear Medicine Instrumentation
Principles of safe operation for nuclear medicine imaging and non-imaging equipment, including quality control. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC116 Lecture 3 Credits 3 Periods
Nuclear Medicine Procedures I
Skeletal, respiratory, gastrointestinal (GI) anatomy, physiology, pathology, and related clinical procedures and techniques. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC126 Lecture 3 Credits 3 Periods
Nuclear Medicine Procedures II
Endocrine, genitourinary, and hematopoietic anatomy, physiology, pathology, and clinical procedures and techniques. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC130 Lab 1 Credit 3 Periods
Professionalism and Patient Care
Communication and interaction skills, patient assessment, procedures involving transport, medical records, infection control, emergency, safety and venous access. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC212 Lab 1.5 Credits 9 Periods
Clinical Practicum I
Orientation to facility policies and departmental organization. Under direct supervision, clinical application of current nuclear medicine practice of patient care and clinical experiences with an emphasis on quality control (QC) procedures. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC220 Lecture 3 Credits 3 Periods
Sectional Anatomy for Nuclear Medicine
Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, thorax, abdominopelvic cavity and extremities. NUC220 may be repeated up to five (5) times for a total of fifteen (15) credits. Prerequisites: Admission to Nuclear Medicine Technology program or permission of Program Director.

NUC222 Lab 3 Credits 15 Periods
Clinical Practicum II
Supervised clinical application of current nuclear medicine practice reinforcing didactic and laboratory concepts. Demonstrate developing competency in introductory nuclear medicine procedures. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC223 Lec + Lab 1 Credit 3 Periods
Nuclear Medicine Image Evaluation II
Evaluation of images related to clinical situations and procedures. Demonstration of technical skills. Peer-reviewed literature. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC232 Lab 3 Credits 15 Periods
Clinical Practicum III
Under the supervision of licensed technologists, enhance skills and knowledge of current nuclear medicine practice with a focus on broadening procedure competencies. Prerequisites: Admission to Nuclear Medicine Technology program.
NUC100 Lecture 1 Credit 1 Period
Introduction to Nuclear Medicine Technology
Role of the Nuclear Medicine Technologist. Job duties, responsibilities, working conditions and work environments in the inpatient clinical settings. Certification and licensing requirements for the Nuclear Medicine Technologist, shadowing experience specific to the nuclear medicine department. Prerequisites: None.

NUC101 Lecture 1 Credit 1 Period
Essentials of Nuclear Medicine Technology
Introduction to the essential information required for the nuclear medicine program. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC103 Lec + Lab 1 Credit 3 Periods
Nuclear Medicine Image Evaluation I
Evaluation of images related to clinical situations and procedures. Demonstration of technical skills. Peer-reviewed literature. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC108 Lecture 1 Credit 3 Periods
Structured Diagnostic Medical Imaging Skills Enhancement
Structured diagnostic imaging cognitive learning and imaging study skills to help students achieve success in their respective imaging courses. Diagnostic medical imaging learning process and critical thinking application skills emphasized in coordination with the level of matriculation. NUC108 may be repeated four (4) times for a total of four (4) credits. Prerequisites: None. Corequisites: Enrolled in Diagnostic Medical Imaging Program (Medical Radiography, Nuclear Medicine Technology, and Diagnostic Medical Ultrasound) or permission of Program Director. Cross-References: DMI108.

NUC110 Lecture 3 Credits 3 Periods
Introduction to Radiation Physics and Biology for Nuclear Medicine
Atomic structure, types of radiation, radiation biology, and radiation protection. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC112 Lab 1 Credit 3 Periods
Nuclear Medicine Quality Control Laboratory
Introduction to the nuclear medicine laboratory rules and equipment. Quality control procedures, laboratory, and radiation safety. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC113 Lab 1 Credit 3 Periods
Nuclear Medicine Clinical Applications Laboratory
Establishing competencies by demonstration of nuclear medicine imaging and non-imaging procedures including quality control. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC114 Lecture 3 Credits 3 Periods
Nuclear Medicine Instrumentation
Principles of safe operation for nuclear medicine imaging and non-imaging equipment, including quality control. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC116 Lecture 3 Credits 3 Periods
Nuclear Medicine Procedures I
Skeletal, respiratory, gastrointestinal (GI) anatomy, physiology, pathology, and related clinical procedures and techniques. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC126 Lecture 3 Credits 3 Periods
Nuclear Medicine Procedures II
Endocrine, genitourinary, and hematopoietic anatomy, physiology, pathology, and clinical procedures and techniques. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC130 Lab 1 Credit 3 Periods
Professionalism and Patient Care
Communication and interaction skills, patient assessment, procedures involving transport, medical records, infection control, emergency, safety and venous access. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC212 Lab 1.5 Credits 9 Periods
Clinical Practicum I
Orientation to facility policies and departmental organization. Under direct supervision, clinical application of current nuclear medicine practice of patient care and clinical experiences with an emphasis on quality control (QC) procedures. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC220 Lecture 3 Credits 3 Periods
Sectional Anatomy for Nuclear Medicine
Sectional human anatomy in the transverse, sagittal and coronal planes. Emphasis on the brain, neck, thorax, abdominopelvic cavity and extremities. NUC220 may be repeated up to five (5) times for a total of fifteen (15) credits. Prerequisites: Admission to Nuclear Medicine Technology program or permission of Program Director.

NUC222 Lab 3 Credits 15 Periods
Clinical Practicum II
Supervised clinical application of current nuclear medicine practice reinforcing didactic and laboratory concepts. Demonstrate developing competency in introductory nuclear medicine procedures. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC223 Lecture 1 Credit 3 Periods
Nuclear Medicine Image Evaluation II
Evaluation of images related to clinical situations and procedures. Demonstration of technical skills. Peer-reviewed literature. Prerequisites: Admission to Nuclear Medicine Technology program.

NUC232 Lab 3 Credits 15 Periods
Clinical Practicum III
Under the supervision of licensed technologists, enhance skills and knowledge of current nuclear medicine practice with a focus on broadening procedure competencies. Prerequisites: Admission to Nuclear Medicine Technology program.
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<th>Course Code</th>
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<tr>
<td>NUC234</td>
<td>Lecture</td>
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<tr>
<td>Nuclear Medicine Department Administration</td>
<td>Practical methods of leadership, ethics, diversity, department management, continuous quality improvement, coding and reimbursement, and accreditation. Prerequisites: Admission to Nuclear Medicine Technology program.</td>
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<tr>
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<td>Nuclear Medicine Procedures III</td>
<td>Central nervous system (CNS) and tumor and infection clinical procedures and techniques to demonstrate anatomy, physiology, and pathology. Radionuclide therapy. Prerequisites: Admission to Nuclear Medicine Technology program.</td>
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<td>Clinical Practicum IV</td>
<td>Independently function under limited supervision of licensed technologists. Advancement of skills to include all required competencies. Practice diverse and appropriate methods of performing procedures. Prerequisites: Admission to Nuclear Medicine Technology program.</td>
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<td>Nuclear Medicine Radiopharmacy</td>
<td>Radiopharmacy and adjunctive pharmaceutical preparation, calculation, administration, and quality control. Prerequisites: Admission to Nuclear Medicine Technology program.</td>
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<td>NUC250</td>
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<td>Fundamentals of Computed Tomography</td>
<td>Introduction to principles and operation of computed tomography (CT) scanner. Prerequisites: Admission to Nuclear Medicine Technology program or permission of the Program Director.</td>
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<td>NUC251</td>
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<td>Computed Tomography and Positron Emission Tomography/Computed Tomography Procedures</td>
<td>Anatomy, physiology, pathology, and techniques related to the performance of clinical computed tomography (CT) and positron emission tomography/computed tomography (PET/CT) procedures. Prerequisites: Admission to Nuclear Medicine Technology program or permission of Program Director.</td>
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<td>Orientation to facility policies and procedures and departmental organization. Reinforcement and broadening of knowledge base related to patient care and the roles and responsibilities of the nuclear medicine technologist at the advanced level. Focus on progression to independent level of function in the areas of patient care, radiation protection, instrumentation imaging, non-imaging and computers, radiopharmacy, diagnostic and therapeutic procedures. Ethical and professional behaviors. Health Insurance Portability and Accountability Act (HIPAA) requirements. Prerequisites: Admission to Nuclear Medicine Technology program.</td>
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Course Listings 2019-2020

(NUR) NURSING SCIENCE: BASIC
NUR104AA Lecture 0.5 Credits 0.5 Periods
Structured Nursing Review
Structured nursing tutorial assistance and nursing study skills to help students achieve success in their respective block of nursing courses. Nursing process and critical thinking application skills emphasized. NUR104AA may be repeated for a total of six (6) credit hours. Course offered as Credit (P) No credit (Z) basis. Prerequisites: None. Corequisites: Enrollment in the Nursing program or permission of Department Chair.

NUR104AB Lecture 1 Credit 1 Period
Structured Nursing Review
Structured nursing tutorial assistance and nursing study skills to help students achieve success in their respective block of nursing courses. Nursing process and critical thinking application skills emphasized. Course offered as Credit (P) No credit (Z) basis. NUR104AB may be repeated for a total of eight (8) credits. Prerequisites: None. Corequisites: Concurrent enrollment in the Nursing program or permission of Department Chair.

NUR150 Lec 12 Credits Lec 9 Periods / Lab 0 Credits Lab 180 Periods
Practical Nurse Bridge Course
Designed to bridge previously gained healthcare knowledge, skills, and abilities of the military veteran student and/or licensed practical nurse (LPN) seeking to refresh knowledge in the role of the practical nurse. Course includes didactic, laboratory, and clinical experiences for practical nursing including concepts and theories related to care of geriatric, adult, pediatric, and childbearing clients. Areas of didactic and clinical focus include: role of the practical nurse collaborating with other members of the healthcare team; concepts of health promotion and disease/illness prevention; therapeutic communication techniques; nutritional concepts; medication administration to include pharmacokinetics and pharmacodynamics of medications, nursing considerations in medication administration, and dosage calculation; documentation and concepts related to information technology. Emphasis in clinical practicum is on nursing care of pediatric and child-bearing families, and older adult residents of long term care facilities with selected alterations in health; concepts of delegation, and management of care for the practical nurse is integrated. Prerequisites: A military veteran with a health care designation (medic/corpsman) or a licensed practical nurse (LPN) who requires a refresher program. Approval of the Nursing Chair or designee and application packet completion is required.

NUR152 Lec 9 Credits Lec 4 Periods / Lab 0 Credits Lab 225 Periods
Nursing Theory and Science I
Introduction of Nurse of the Future competencies as a foundational framework for development of the professional nurse. Basic care concepts and the nursing process are utilized to meet the needs of adult and older adult patients. Prerequisites: Admission into the Nursing program.

NUR158 Lec 6 Credits Lec 4 Periods / Lab 0 Credits Lab 90 Periods
Nurse Assisting
Introduction to the role of the nursing assistant for clients across the wellness/illness continuum within the small scope of practice. Includes basic problem solving processes specific to meeting the basic and holistic needs of clients, therapeutic communication skills essential for the nursing assistant, interventions to ensure the needs and safety of the client, specific types of diseases, conditions and alterations in behavior of the client, and principles of nutrition and fluid balance. Focus is on special needs of the elder client in the acute and long-term care settings, and basic emergency care skills and procedures. Provides opportunity for the development of clinical competency in the performance of selected nurse assisting skills and procedures through participation in the care of clients. Prerequisites: (A grade of C or better in RDG091 or higher RDG reading course or eligibility for CRE101 as indicated by appropriate reading placement test score, or HESI-A2 exam English composite score of 75% or higher) AND (a grade of C or better in MAT082, or eligibility for MAT090 or higher as indicated by appropriate math placement test score, or HESI-A2 exam Math score of 75% or higher). Must provide current Level One DPS Fingerprint Clearance Card, meet pass status on MCDQ background check, and submit required health and safety documentation.

Course Listings 2019-2020

NUR160PN Lec 1 Credit Lec 6 Periods / Lab 0 Credits Lab 225 Periods
Practical Nursing Theory and Science I
Core values of the Practical Nursing program, nursing history, standards, and scope of practice of the practical nurse. Safe nursing care of clients with selected alterations in health; fundamental concepts of health promotion, disease/illness prevention. Nursing care based upon integration of pathophysiology, nutrition, communication, and physical, biological, and psycho-social sciences. Uses information technology in performing and documenting client care. Prerequisites: Admission into the Fast Track Practical Nursing program.

NUR172 Lec 9 Credits Lec 5.5 Periods / Lab 0 Credits Lab 157.5 Periods
Nursing Theory and Science II
Utilization of Nurse of the Future competencies to develop knowledge, skills, and attitudes to provide safe, quality patient care across the wellness-illness continuum in selected medical surgical and mental health patients. Prerequisites: A grade of C or better in BIO202 and NUR152 or permission of Nursing Department Chair.

NUR180PN Lec 11 Credit Lec 6 Periods / Lab 0 Credits Lab 15 Periods Practical Nursing Theory and Science II
Holistic practical nursing concepts and theories related to care of childbearing, pediatric, adult, and geriatric clients. Role of the practical nurse collaborating with other members of the healthcare team. Concepts of health promotion and disease/illness prevention. Nursing care based upon integration of pathophysiology, nutrition, communication, and physical, biological and psycho-social sciences. Information technology in performing and documenting client care. Emphasis on nursing care related to pediatric, child-bearing families, and adult clients with selected alterations in health; concepts of delegation, prioritization and management of care for the practical nurse based on the core values of the Nursing program. Prerequisites: A grade of C or better in NUR160PN.

NUR187 Lecture 1.5 Credits 1.5 Periods
Pharmacology and Medication Administration II
Overview of selected drug classifications and categories. Emphasis on principles of drug metabolism and effects, interactions and adverse reactions, and nursing implications for safe practice. Requires application of previous knowledge of physical, biological, and social sciences. Prerequisites: Permission of Nursing Department/Division Chair.

NUR191 Lec + Lab 3 Credits 75 Periods
Practical Nursing Transition
Overview of the role of the practical nurse in the care of patients. Includes nursing standards and scope of practice of the practical nurse. Emphasis on nursing care related to pediatric and care of the well childbearing patient and childbearing family. Focus on the role of practical nurse in providing care through interventions consistent with established nursing care plans. Prerequisites: A grade of C or better in NUR171, or NUR172, or permission of Nursing Department Chair.

NUR252 Lec 9 Credits Lec 5.5 Periods / Lab 0 Credits Lab 157.5 Periods
Nursing Theory and Science III
Application of critical thinking strategies related to holistic care of the newborn and childbearing patients. Integration of concepts related to holistic care of adults and older adult patients with selected acute and chronic alterations in health. Integration of professional nursing standards in role development. Utilization of previous knowledge of physical, biologic, psychosocial sciences, and the cultural, spiritual aspects of nursing care. Integration of concepts of nutrition, pharmacology, communication, health promotion, and pathophysiology into nursing care. Prerequisites: A grade of C or better in CRE101 and NUR172 and PSY101) or permission of Nursing Department Chair.

NUR283 Lec 9 Credits Lec 5.5 Periods / Lab 0 Credits Lab 157.5 Periods
Nursing Theory and Science IV
Applies Nurse of the Future competencies to practice and manage care for the child/family unit and adults requiring complex care throughout the wellness/illness continuum, and prepare for transition from student to professional nurse. Prerequisites: A grade of C or better in BIO205 and NUR252) or permission of Nursing Department Chair.
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<tr>
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<th>Lecture Credits</th>
<th>Lecture Periods</th>
<th>Lab Credits</th>
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**NUR104AA** Lecture 0.5 Credits 0.5 Periods

**Structured Nursing Review**

Struected nursing tutorial assistance and nursing study skills to help students achieve success in their respective block of nursing courses. Nursing process and critical thinking application skills emphasized. NUR104AA may be repeated for a total of six (6) credit hours. Course offered as Credit (P) No credit (Z) basis. Prerequisites: None. Corequisites: Concurrent enrollment in the Nursing program or permission of Department Chair.

**NUR104AB** Lecture 1 Credit 1 Period

**Structured Nursing Review**

Structured nursing tutorial assistance and nursing study skills to help students achieve success in their respective block of nursing courses. Nursing process and critical thinking application skills emphasized. Course offered as Credit (P) No credit (Z) basis. NUR104AB may be repeated for a total of eight (8) credits. Prerequisites: None. Corequisites: Concurrent enrollment in the Nursing program or permission of Department Chair.

**NUR150** Lec 12 Credits Lec 9 Periods / Lab 0 Credits Lab 180 Periods

**Practical Nurse Bridge Course**

Designed to bridge previously gained healthcare knowledge, skills, and abilities of the military veteran student and/or licensed practical nurse (LPN) seeking to refresh knowledge in the role of the practical nurse. Course includes didactic, laboratory, and clinical experiences for practical nursing including concepts and theories related to care of geriatric, adult, pediatric, and childbearing clients. Areas of didactic and clinical focus include: role of the practical nurse collaborating with other members of the healthcare team; concepts of health promotion and disease/illness prevention; therapeutic communication techniques; nutritional concepts; medication administration to include pharmacokinetics and pharmacodynamics of medications, nursing considerations in medication administration, and dosage calculation; documentation and concepts related to information technology. Emphasis in clinical practicum is on nursing care of pediatric and child-bearing families, and older adult residents of long term care facilities with selected alterations in health; concepts of delegation, and management of care for the practical nurse is integrated. Prerequisites: A military veteran with a health care designation (medic/corpsman) or a licensed practical nurse (LPN) who requires a refresher program. Approval of the Nursing Chair or designee and application packet completion is required.

**NUR152** Lec 9 Credits Lec 4 Periods / Lab 0 Credits Lab 225 Periods

**Nursing Theory and Science I**

Introduction of Nurse of the Future competencies as a foundational framework for development of the professional nurse. Basic care concepts and the nursing process are utilized to meet the needs of adult and older adult patients. Prerequisites: Admission into the Nursing program.

**NUR155** Lec 6 Credits Lec 4 Periods / Lab 0 Credits Lab 90 Periods

**Nurse Assisting**

Introduction to the role of the nursing assistant for clients across the wellness/illness continuum within the small scope of practice. Includes basic problem solving processes specific to meeting the basic and holistic needs of clients, therapeutic communication skills essential for the nursing assistant, interventions to ensure the needs and safety of the client, specific types of diseases, conditions and alterations in behavior of the client, and principles of nutrition and fluid balance. Focus is on special needs of the older client in the acute and long-term care settings, and basic emergency care skills and procedures. Provides opportunity for the development of clinical competency in the performance of selected nurse assisting skills and procedures through participation in the care of clients. Prerequisites: (A grade of C or better in RDG091 or higher RDG reading course or eligibility for CRI101 as indicated by appropriate reading placement test score, or HESI-A2 exam English composite score of 75% or higher) AND (a grade of C or better in MAT082, or eligibility for MAT090 or higher as indicated by appropriate math placement test score, or HESI-A2 exam Math score of 75% or higher). Must provide current Level One DPS Fingerprint Clearance Card, meet pass status on MCDL background check, and submit required health and safety documentation.
**Course Listings 2019-2020**

**NUR292  Lecture  2 Credits  2 Periods**
Overview of Current Nursing Principles and Practice Across the Lifespan
Update of current principles and practice guidelines for returning nursing in pediatric, obstetrical and geriatric clients. Overview of nursing concepts, therapeutic interventions, and evidence-based practice for clients across the lifespan. Prerequisites: Permission of Instructor.

**NUR295  Lec 10 Credits  Lec 6 Periods / Lab 0 Credits  Lab 12 Periods**
Registered Nurse Refresher
Update of current principles of nursing theory and practice for Registered Nurses. Didactic instruction meets all Arizona State Board of Nursing requirements: nursing process and patient-centered care; pharmacology; medication calculation, and medication administration; communication; critical thinking, clinical decision making and evidence-based practice; delegation, management, and leadership; working with interdisciplinary teams; meeting psychological and physiological needs of adult clients with medical-surgical conditions; ethics; documentation including electronic health records; informatics; and quality improvement. Concentrated preceptorship experience under the supervision of a Registered Nurse with faculty guidance. Individualized teaching and learning opportunities to build confidence, competence and an increased level of independent functioning. Prerequisites: Permission of Instructor.

**OAS108  Lecture  3 Credits  3 Periods**
Business English
Comprehensive coverage of correct use of English grammar including spelling, punctuation, capitalization, and number style mechanics in a business context. Prerequisites: None.

**OPH) OPHTHALMIC MEDICAL ASSISTANT ☝**

**OPH100  42 Clock Hours**
Electronic Medical Records
Discover the daily workflow of an ophthalmic technician, and examine how healthcare technology and training on an electronic medical record system is both helpful and essential for every practicing technician. This course will allow you to learn how to quickly and professionally document your findings on a patient's electronic medical record. You will learn how to efficiently enter in all of the information that you gather from the diagnostic tests that you run, as well as how to chart all of your examination findings effectively, on the most cutting edge ophthalmic electronic health system on the market. The knowledge gained from this course will allow you to have a complete understanding on how to operate a comprehensive ophthalmic electronic medical records system, a key component of every modern ophthalmic practice. Prerequisites: None.

**OPH101  54 Clock Hours**
Introduction to Eye Care
This course will introduce the student to the meaning of ophthalmology and the different members of the ophthalmic eye care team. The student will learn different certification levels and the importance of professional development. Body structure, body function, anatomy and physiology of the eye will be discussed in detail. Proper moving, transferring and safety issues of patients; as well as knowledge about diverse populations, geriatric patients and patients with special needs will be demonstrated and discussed. An introduction to infection control, agency guidelines, and using proper aseptic technique will be discussed and demonstrated. Prerequisites: OPH100 and current health and safety documents.

**Course Listings 2019-2020**

**OPH110  42 Clock Hours**
Medical Terminology/Abbreviations & Disease Processes for Ophthalmic Medical Assistant
This course will introduce the student to understanding the signs and symptoms of specific eye diseases, as well as how said disease affects the visual system. Systemic diseases with ocular manifestations will be discussed. The students will discuss and demonstrate and record vital signs. Prerequisites: OPH100 and OPH101, and current health and safety requirements.

**OPH112  150 Clock Hours**
Clinical Theory and Skills
This course will explain the principles of optics and refractive states of the eye. Reading eyeglasses and measuring the patient for the proper eyeglass prescription will be demonstrated. The importance of ophthalmic pharmacology will be discussed and students will learn how the medications are used in the ophthalmology practice. Students will learn how to properly write a prescription for eye medications. Demonstration of proper eye drop instillation will be given. The importance of current microorganisms and infection control will be discussed in detail. The students will begin performing comprehensive medical eye examination. Ocular motility and other adjunctive testing in ophthalmology will be demonstrated. Prerequisites: OPH110 and current health and safety requirements.

**OPH114  160 Clock Hours**
Basic Skills and Ocular Assessment
This course will develop and refine the knowledge and skills necessary to assist the ophthalmologist in completion of the findings, assessment, and plan needed in a comprehensive ophthalmic medical evaluation for each patient. Community eye health and the importance of low vision will be discussed. The student ophthalmic assistant will perform and demonstrate comprehensive examinations and be required to pass skill evaluation testing. Prerequisites: OPH112, and current health and safety requirements.

**OPH190  120 Clock Hours**
Ophthalmic Assisting Externship
This course will give students hands-on experience with patients, staff, and other ophthalmic professionals while using their skills and techniques they obtain from lecture and lab courses. Students are assigned to an approved partnership site for one hundred and twenty (120) hours of externship. This will prepare the student for employment as an ophthalmic medical assistant. Externship hours are site specific and may require attendance any day of the week, including during unscheduled days and times. Prerequisites: OPH114 and current health and safety requirements. Successful completion of all required program coursework.

**OSH) OCCUPATIONAL SAFETY AND HEALTH**

**OSH101  Lecture  3 Credits  3 Periods**
Introduction to Occupational Safety, Health, and Environmental Technology
Overview of occupational safety, health, and environmental regulations and technology. Overview of the regulatory framework related to safety and environmental program management. Career opportunities and the relationship to business management. Prerequisites: None. Cross-References: HMT101.

**OSH102  Lecture  3 Credits  3 Periods**
Introduction to Industrial Hygiene
Course Listings 2019-2020

NUR292 Lecture 2 Credits 2 Periods
Overview of Current Nursing Principles and Practice Across the Lifespan
Update of current principles and practice guidelines for returning nursing in pediatric, obstetrical and geriatric clients. Overview of nursing concepts, therapeutic interventions, and evidence-based practice for clients across the lifespan. Prerequisites: Permission of Instructor.

NUR295 Lec 10 Credits Lec 6 Periods / Lab 0 Credits Lab 12 Periods
Registered Nurse Refresher
Update of current principles of nursing theory and practice for Registered Nurses. Didactic instruction meets all Arizona State Board of Nursing requirements: nursing process and patient-centered care; pharmacology, medication calculation, and medication administration; communication; critical thinking, clinical decision making and evidence-based practice; delegation, management, and leadership; working with interdisciplinary teams; meeting psychological and physiological needs of adult clients with medical-surgical conditions; ethics; documentation including electronic health records; informatics; and quality improvement. Concentrated preceptorship experience under the supervision of a Registered Nurse with faculty guidance. Individualized teaching and learning opportunities to build confidence, competence and an increased level of independent functioning. Prerequisites: Permission of Instructor.

(OAS) OFFICE AUTOMATION SYSTEMS
OAS108 Lecture 3 Credits 3 Periods
Business English
Comprehensive coverage of correct use of English grammar including spelling, punctuation, capitalization, and number style mechanics in a business context. Prerequisites: None.

(oph) OPHTHALMIC MEDICAL ASSISTANT
OPH100 42 Clock Hours
Electronic Medical Records
Discover the daily workflow of an ophthalmic technician, and examine how healthcare technology and training on an electronic medical record system is both helpful and essential for every practicing technician. This course will allow you to learn how to quickly and professionally document your findings on a patient's electronic medical record. You will learn how to efficiently enter all of the information that you gather from the diagnostic tests that you run, as well as how to chart all of your examination findings effectively, on the most cutting edge ophthalmic electronic health system on the market. The knowledge gained from this course will allow you to have a complete understanding on how to operate a comprehensive ophthalmic electronic medical records system, a key component of every modern ophthalmic practice. Prerequisites: None.

OPH101 54 Clock Hours
Introduction to Eye Care
This course will introduce the student to the meaning of ophthalmology and the different members of the ophthalmic eye care team. The student will learn different certification levels and the importance of professional development. Body structure, body function, anatomy and physiology of the eye will be discussed in detail. Proper moving, transferring and safety issues of patients; as well as knowledge about diverse populations, geriatric patients and patients with special needs will be demonstrated and discussed. An introduction to infection control, agency guidelines, and using proper aseptic technique will be discussed and demonstrated. Prerequisites: OPH100 and current health and safety documents.

Course Listings 2019-2020

OPH110 42 Clock Hours
Medical Terminology/Abbreviations & Disease Processes for Ophthalmic Medical Assistant
This course will introduce the student to understanding the signs and symptoms of specific eye diseases, as well as how said disease affects the visual system. Systemic diseases with ocular manifestations will be discussed. The students will discuss and document by writing essays on the causes of specific diseases and the procedures used to diagnose and treat these diseases. The students will begin practicing medical terminology and acceptable abbreviations specific to the field of ophthalmology with an outcome of the ability to spell, define, and use ophthalmic terminology and abbreviations. The student will learn, demonstrate and record vital signs. Prerequisites: OPH100 and OPH101, and current health and safety requirements.

OPH112 150 Clock Hours
Clinical Theory and Skills
This course will explain the principles of optics and refractive states of the eye. Reading eyeglasses and measuring the patient for the proper eyeglass prescription will be demonstrated. The importance of ophthalmic pharmacology will be discussed and students will learn how the medications are used in the ophthalmology practice. Students will learn how to properly write a prescription for eye medications. Demonstration of proper eye drop instillation will be given. The importance of current microorganisms and infection control will be discussed in detail. The students will begin performing comprehensive medical eye examination. Ocular motility and other adjunctive testing in ophthalmology will be demonstrated. Prerequisites: OPH110 and current health and safety requirements.

OPH114 160 Clock Hours
Basic Skills and Ocular Assessment
This course will develop and refine the knowledge and skills necessary to assist the ophthalmologist in completion of the findings, assessment, and plan needed in a comprehensive ophthalmic medical evaluation for each patient. Community eye health and the importance of low vision will be discussed. The student ophthalmic assistant will perform and demonstrate comprehensive examinations and be required to pass skill evaluation testing. Prerequisites: OPH112, and current health and safety requirements.

OPH190 120 Clock Hours
Ophthalmic Assisting Externship
This course will give students hands-on experience with patients, staff, and other ophthalmic professionals while using their skills and techniques they obtain from lecture and lab courses. Students are assigned to an approved partnership site for one hundred and twenty (120) hours of externship. This will prepare the student for employment as an ophthalmic medical assistant. Externship hours are site specific and may require attendance any day of the week, including during unscheduled days and times. Prerequisites: OPH114 and current health and safety requirements. Successful completion of all required program coursework.

(osh) OCCUPATIONAL SAFETY AND HEALTH
OSH101 Lecture 3 Credits 3 Periods
Introduction to Occupational Safety, Health, and Environmental Technology
Overview of occupational safety, health, and environmental regulations and technology. Overview of the regulatory framework related to safety and environmental program management. Career opportunities and the relationship to business management. Prerequisites: None. Cross-References: HMT101.

OSH102 Lecture 3 Credits 3 Periods
Introduction to Industrial Hygiene
OSH105 Lecture 2 Credits 2 Periods
Course Listings 2019-2020

Construction Safety

OSH106 Lecture 2 Credits 2 Periods
Industrial Safety
Safety, health management, and accident prevention in industrial work environment. Role of Occupational Safety and Health Administration (OSHA) Act, materials handling, electrical safety, machine safety, first response to fire and medical emergencies, safety signs and color codes, recognition of safety and health hazards accident prevention, management responsibilities, and OSHA 10 certification. Prerequisites: None. Cross-References: OSH/MIT106.

OSH106AA Lecture 3 Credits 3 Periods
Industrial Safety
Safety, health management and accident prevention in industrial work environment. Role of Occupational Safety and Health Administration (OSHA) Act, materials handling, electrical safety, machine safety, emergency preparedness, safety signs and color codes, recognition of safety and health hazards accident prevention, and management's responsibilities. Prerequisites: None.

OSH107 Lecture 3 Credits 3 Periods
Occupational Safety Principles and Practice
Application of safety and health regulations and best practices. Hazard identification and accident investigation techniques. Major construction hazards and controls. Application of fire protection standards. Prerequisites: A grade of C or better in OSH106AA or permission of instructor.

OSH189AA Lec + Lab 1 Credit 2 Periods
Professional Leadership Development for Occupational Safety and Health I
Personal and professional leadership development related to occupational safety and health (OSH) through active participation in professional mentoring, exposure to industry technical meetings, technical tours, college discipline specific campus club, scholarship awareness, and other similar events. Supplemented by readings, and pre- and post-activity discussion and critique. Varied content due to variety of personal and professional development available. Prerequisites: A grade of C or better in OSH106AA.

OSH203 Lecture 3 Credits 3 Periods
Health and Safety Program Management I
Introduction to safety program theory and principles needed to develop, manage, implement and evaluate a safety and health program. Systems safety and applied psychology theories that enhance safety program management. Hazard identification methods and controls, and application of these principles to case studies. Prerequisites: A grade of C or better in OSH106AA or permission of instructor.

OSH204 Lecture 3 Credits 3 Periods
Health and Safety Program Management II
Current and emerging topics in safety and health program management. Exploration of current topics through emerging regulatory and/or consensus standards organizations. Case study investigation and analysis with applications to safety and health management. Introduction to new and evolving online training courses, seminars, video and documents. Adult learning and instructional theory. Prerequisites: A grade of C or better in OSH107 and OSH203, or permission of Instructor.

OSH206 Lecture 3 Credits 3 Periods
Risk Management and Loss Control
Statistical and cost analysis, report writing, and injury prevention related to loss control. Prevention programs designed to minimize or eliminate property and personnel loss or injury. Prerequisites: None.

OSH218 Lecture 3 Credits 3 Periods
Course Listings 2019-2020

Ergonomics
Analysis and evaluation of ergonomics risk factors for occupational tasks. Application of theories, methods, and techniques used in work design and systems. Methodological problems in human information processing, human control functions, human-machine interface, work design and process evaluation. Prerequisites: A grade of C or better in OSH107 or permission of instructor.

OSH220 Lecture 3 Credits 3 Periods
Safety and Emergency Management
Assessment of emergency management systems for occupational safety program development. Planning and implementation of the four phases of emergency management: mitigation, preparedness, response, and recovery. Analysis of all hazards preparedness and response in emergency situations resulting from natural and technological hazards. Planning and budgeting for resources and staffing. Prerequisites: A grade of C or better in OSH105AA or OSH106AA.

OSH230 Lec + Lab 3 Credits 3 Periods
Safety and Environmental Response to Hazardous Spills and Waste
Evaluation and demonstration of safety procedures regarding response to hazardous waste treatment sites, storage or hazardous waste facilities, and disposal operations specifically required in the Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1910.120. Prerequisites: A grade of C or better in OSH105, or OSH105AA, or FAC/GTC/OSH/MIT106, or OSH106AA, or equivalent training as determined by the Program Director of the Occupational Safety and Health or Water Resources Technologies programs.

OSH240 Lecture 3 Credits 3 Periods
Facilities Special Systems and Codes
Building occupant safety requirements including industry standards, regulations, building codes, fire codes and life safety codes. Fundamentals of fire alarm system operation, inspection and maintenance. Fundamentals of fire sprinkler system operation, inspection and maintenance. Principles of life safety smoke control systems, including fire damper and combination fire/smoke damper applications. Prerequisites: A grade of C or better in OSH105AA or OSH106AA. Cross-References: FAC240.

OSH270AB Lab 2 Credits 12 Periods
Occupational Safety and Health Internship
Occupational safety and health (OSH) work experience in business, industry or government. One hundred and sixty (160) hours of designated work experience. OSH270AB may not be repeated for credit. Prerequisites: A grade of C or better in HMT/OSH101 and OSH106AA.

OSH270AC Lab 2 Credits 18 Periods
Occupational Safety and Health Internship
Occupational safety and health (OSH) work experience in business, industry or government. One hundred and sixty (160) hours of designated work experience. OSH270AC may not be repeated for credit. Prerequisites: A grade of C or better in HMT/OSH101 and OSH106AA.

OSH270AB Lab 2 Credits 12 Periods
Occupational Safety and Health Internship
Occupational safety and health (OSH) work experience in business, industry or government. One hundred and sixty (160) hours of designated work experience. OSH270AB may not be repeated for credit. Prerequisites: A grade of C or better in HMT/OSH101 and OSH106AA.

OSH290AC Lab 3 Credits 3 Periods
Case Study and Research Project
Completion of a selected safety project in policy and procedure development or training program curriculum design in actual or simulated work setting. Combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students. Prerequisites: Permission of Instructor.
OSH105 Lecture 2 Credits 2 Periods

Construction Safety

OSH106 Lecture 2 Credits 2 Periods

Industrial Safety
Safety, health management, and accident prevention in industrial work environment. Role of Occupational Safety and Health Administration (OSHA) Act, materials handling, electrical safety, machine safety, first response to fire and medical emergencies, safety signs and color codes, recognition of safety and health hazards and accident prevention, management responsibilities, and OSHA 10 certification. Prerequisites: None. Cross-References: OSH/MIT106.

OSH106AA Lecture 3 Credits 3 Periods

Industrial Safety
Safety, health management and accident prevention in industrial work environment. Role of Occupational Safety and Health Administration (OSHA) Act, materials handling, electrical safety, machine safety, emergency preparedness, safety signs and color codes, recognition of safety and health hazards accident prevention, and management's responsibilities. Prerequisites: None.

OSH107 Lecture 3 Credits 3 Periods

Occupational Safety Principles and Practice
Application of safety and health regulations and best practices. Hazard identification and accident investigation techniques. Major construction hazards and controls. Application of fire protection standards. Prerequisites: A grade of C or better in OSH106AA or permission of instructor.

OSH189AA Lec + Lab 1 Credit 2 Periods

Professional Leadership Development for Occupational Safety and Health I
Personal and professional leadership development related to occupational safety and health (OSH) through active participation in professional mentoring, exposure to industry technical meetings, technical tours, college discipline specific campus club, scholarship awareness, and other similar events. Supplemented by readings, and pre- and post-activity discussion and critique. Varied content due to variety of personal and professional development available. Prerequisites: A grade of C or better in OSH106AA.

OSH203 Lecture 3 Credits 3 Periods

Health and Safety Program Management I
Introduction to safety program theory and principles needed to develop, manage, implement and evaluate a safety and health program. Systems safety and applied psychology theories that enhance safety program management. Hazard identification methods and controls, and application of these principles to case studies. Prerequisites: A grade of C or better in OSH106AA or permission of Instructor.

OSH204 Lecture 3 Credits 3 Periods

Health and Safety Program Management II
Current and emerging topics in safety and health program management. Exploration of current topics through emerging regulatory and/or consensus standards organizations. Case study investigation and analysis with applications to safety and health management. Introduction to new and evolving online training courses, seminars, video and documents. Adult learning and instructional theory. Prerequisites: A grade of C or better in OSH107 and OSH203, or permission of Instructor.

OSH206 Lecture 3 Credits 3 Periods

Risk Management and Loss Control
Statistical and cost analysis, report writing, and injury prevention related to loss control. Prevention programs designed to minimize or eliminate property and personnel loss or injury. Prerequisites: None.

OSH218 Lecture 3 Credits 3 Periods

Ergonomics
Analysis and evaluation of ergonomics risk factors for occupational tasks. Application of theories, methods, and techniques used in work design and systems. Methodological problems in human information processing, human control functions, human-machine interface, work design and process evaluation. Prerequisites: A grade of C or better in OSH107 or permission of instructor.

OSH220 Lecture 3 Credits 3 Periods

Safety and Emergency Management
Assessment of emergency management systems for occupational safety program development. Planning and implementation of the four phases of emergency management: mitigation, preparedness, response, and recovery. Analysis of all hazards preparedness and response in emergency situations resulting from natural and technological hazards. Planning and budgeting for resources and staffing. Prerequisites: A grade of C or better in OSH105AA or OSH106AA.

OSH230 Lec + Lab 3 Credits 3 Periods

Safety and Environmental Response to Hazardous Spills and Waste
Evaluation and demonstration of safety procedures regarding response to hazardous waste treatment sites, storage or hazardous waste facilities, and disposal operations specifically required in the Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1910.120. Prerequisites: A grade of C or better in OSH105, or OSH105AA, or FAC/GTC/OSH/MIT106, or OSH106AA, or equivalent training as determined by the Program Director of the Occupational Safety and Health or Water Resources Technologies programs.

OSH240 Lecture 3 Credits 3 Periods

Facilities Special Systems and Codes
Building occupant safety requirements including industry standards, regulations, building codes, fire codes and life safety codes. Fundamentals of fire alarm system operation, inspection and maintenance. Fundamentals of fire sprinkler system operation, inspection and maintenance. Principles of life safety smoke control systems, including fire damper and combination fire/smoke damper applications. Prerequisites: A grade of C or better in OSH105AA or OSH106AA. Cross-References: FAC240.

OSH270AB Lab 2 Credits 12 Periods

Occupational Safety and Health Internship
Occupational safety and health (OSH) work experience in business, industry or government. One hundred and sixty (160) hours of designated work experience. OSH270AB may not be repeated for credit. Prerequisites: A grade of C or better in HMT/OSH101 and OSH106AA.

OSH270AC Lab 3 Credits 18 Periods

Occupational Safety and Health Internship
Occupational safety and health (OSH) work experience in business, industry or government. Two hundred and forty (240) hours of designated work experience. OSH270AC may not be repeated for credit. Prerequisites: A grade of C or better in HMT/OSH101 and OSH106AA.

OSH290AC Lab 3 Credits 3 Periods

Case Study and Research Project
Completion of a selected safety project in policy and procedure development or training program curriculum design in actual or simulated work setting. Combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students. Prerequisites: Permission of Instructor.
(PED) PHYSICAL EDUCATION

PED101BA  Lec + Lab  1 Credit  2 Periods
Baseball
Basic skills and game strategy of baseball. Class emphasis on competition and drills. PED101BA may be repeated for credit. Prerequisites: None.

PED101BC  Lec + Lab  1 Credit  2 Periods
Boot Camp
Vigorous physical and mental conditioning incorporating cardiovascular, core fitness, strength training, and flexibility. Emphasis will be placed on proper body mechanics and safety. PED101BC may be repeated for credit. Prerequisites: None.

PED101PC  Lec + Lab  1 Credit  2 Periods
Physical Conditioning
Exercise program with access to free weights, strength machines and cardio equipment. PED101PC may be repeated for credit. Prerequisites: None.

PED101PS  Lec + Lab  1 Credit  2 Periods
Pilates
Mat-based exercise system focused on improving flexibility and strength for the total body. Teaches core control and stabilization while improving postural alignment. PED101PS may be repeated for credit. Prerequisites: None.

PED101SO  Lec + Lab  1 Credit  2 Periods
Soccer
Basic skills and game strategy of soccer. Class emphasis on competition and drills. PED101SO may be repeated for credit. Prerequisites: None.

PED101YO  Lec + Lab  1 Credit  2 Periods
Yoga
Promotion of overall health by strengthening muscles and stimulating glands and organs. Basic postures, breathing and relaxation techniques. PED101YO may be repeated for credit. Prerequisites: None.

PED102BA  Lec + Lab  1 Credit  2 Periods
Baseball - Intermediate
To improve upon basic skills and game strategy of baseball at the intermediate level. Class emphasis on competition and drills. PED102BA may be repeated for credit. Prerequisites: None. Prior experience recommended.

PED102SO  Lec + Lab  1 Credit  2 Periods
Soccer - Intermediate
To improve upon basic skills and game strategy of soccer at the intermediate level. Class emphasis on competition and drills. PED102SO may be repeated for credit. Prerequisites: None. Prior experience recommended.

PED103YO  Lec + Lab  0.5 Credits  1 Period
Yoga
Promotion of overall health by strengthening muscles, and stimulating glands and organs. Basic postures, breathing and relaxation techniques. PED103YO may be repeated for credit. Prerequisites: None.

(PHC) PHARMACY TECHNICIAN

PHC101  60 Clock Hours
Pharmacology for Pharmacy Technicians
Overall history of pharmacy from ancient times to today; pharmacy technician job ethics and responsibilities; state and national drug laws and regulations; pharmacy information reference material; pharmaceutical abbreviations and introduction to prescription sig codes. Prerequisites: Health and safety documents.

PHC102  120 Clock Hours
Pharmacy Tech I
Technical aspects of prescription dispensing and drug distribution in the retail and hospital setting utilizing the computer. Bulk compounding, packaging, inventory control, drug storage and a variety of drug delivery systems. Laws that relate to specific technical tasks. Prerequisites: PHC101.

PHC102AB  128 Clock Hours
Pharmacy Tech II
Responsibilities of a pharmacy technician specific to working in a hospital and community setting; common drugs and their uses; drug routes of administration; basic biopharmaceutics; billing and reimbursement; sterile and non-sterile compounding; pharmacy career development; introduction to resume building, job search training. Prerequisites: PHC102.
### (PED) PHYSICAL EDUCATION

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<th>Course Code</th>
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| PED101BA    | Lec + Lab | 1 | 2 | Baseball  
Basic skills and game strategy of baseball. Class emphasis on competition and drills. PED101BA may be repeated for credit. Prerequisites: None. |
| PED101BC    | Lec + Lab | 1 | 2 | Boot Camp  
Vigorous physical and mental conditioning incorporating cardiovascular, core fitness, strength training, and flexibility. Emphasis will be placed on proper body mechanics and safety. PED101BC may be repeated for credit. Prerequisites: None. |
| PED101PC    | Lec + Lab | 1 | 2 | Physical Conditioning  
Exercise program with access to free weights, strength machines and cardio equipment. PED101PC may be repeated for credit. Prerequisites: None. |
| PED101PS    | Lec + Lab | 1 | 2 | Pilates  
Mat-based exercise system focused on improving flexibility and strength for the total body. Teaches core control and stabilization while improving postural alignment. PED101PS may be repeated for credit. Prerequisites: None. |
| PED101SO    | Lec + Lab | 1 | 2 | Soccer  
Basic skills and game strategy of soccer. Class emphasis on competition and drills. PED101SO may be repeated for credit. Prerequisites: None. |
| PED101YO    | Lec + Lab | 1 | 2 | Yoga  
Promotion of overall health by strengthening muscles and stimulating glands and organs. Basic postures, breathing and relaxation techniques. PED101YO may be repeated for credit. Prerequisites: None. |
| PED102BA    | Lec + Lab | 1 | 2 | Baseball - Intermediate  
To improve upon basic skills and game strategy of baseball at the intermediate level. Class emphasis on competition and drills. PED102BA may be repeated for credit. Prerequisites: None. Prior experience recommended. |
| PED102SO    | Lec + Lab | 1 | 2 | Soccer - Intermediate  
To improve upon basic skills and game strategy of soccer at the intermediate level. Class emphasis on competition and drills. PED102SO may be repeated for credit. Prerequisites: None. Prior experience recommended. |
| PED103YO    | Lec + Lab | 0.5 | 1 | Yoga  
Promotion of overall health by strengthening muscles, and stimulating glands and organs. Basic postures, breathing and relaxation techniques. PED103YO may be repeated for credit. Prerequisites: None. |

### (PHC) PHARMACY TECHNICIAN

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<th>Course Code</th>
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| PHC101      | 60 Clock Hours | Pharmacology for Pharmacy Technicians  
Overall history of pharmacy from ancient times to today; pharmacy technician job ethics and responsibilities; state and national drug laws and regulations; pharmacy information reference material; pharmaceutical abbreviations and introduction to prescription sig codes. Prerequisites: health and safety documents. |
| PHC102      | 120 Clock Hours | Pharmacy Tech I  
Technical aspects of prescription dispensing and drug distribution in the retail and hospital setting utilizing the computer. Bulk compounding, packaging, inventory control, drug storage and a variety of drug delivery systems. Laws that relate to specific technical tasks. Prerequisites: PHC101. |
| PHC102AB    | 128 Clock Hours | Pharmacy Tech II  
Responsibilities of a pharmacy technician specific to working in a hospital and community setting; common drugs and their uses; drug routes of administration; basic biopharmaceutics; billing and reimbursement; sterile and non-sterile compounding; pharmacy career development; introduction to resume building, job search training. Prerequisites: PHC102. |
### PHC107  90 Clock Hours
**Math and Dosages**
Principles of household, metric and apothecary measurements, medical symbols and abbreviations. Emphasizes drug dose unit calculations and drug pricing. Prerequisites: PHC102AB.

### PHC114  200 Clock Hours
**Pharmacy Tech Externship**
This course will give students hands-on experience with patients, staff, and other pharmacy professionals while using their skills and techniques they obtain from the pharmacy program coursework. Students are assigned to the site of an approved pharmacy partner. This will prepare the student for the transition from school to industry, to gain valuable work experience, and to provide an opportunity to network in the workforce. Externship hours are site specific and may require attendance any day of the week, including during unscheduled days and times. Prerequisites: PHC102AB, PHC107, PHC122.

### PHC122  18 Clock Hours
**Pharmacy Tech Certification Review**
Pharmacy Technician Certification Board Exam. Preparation for the professional practice national examinations. Basic study and test taking skills. Prerequisites: PHC107.

### PHI101  Lecture 3 Credits 3 Periods
**Introduction to Philosophy**
SUN# PHI1101
General consideration of human nature and the nature of the universe. Knowledge, perception, freedom and determinism, and the existence of God. Prerequisites: None.

### PHI103  Lecture 3 Credits 3 Periods
**Introduction to Logic**
SUN# PHI1103
Informal logic, logical fallacies, elementary symbolic logic, analysis of argument forms, and construction of proofs for validity. Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.

### PHI105  Lecture 3 Credits 3 Periods
**Introduction to Ethics**
SUN# PHI1105
A survey of ethical theory in Western philosophy, including the major normative theories and selected metaethical theories. Prerequisites: None.

### PHI213  Lecture 3 Credits 3 Periods
**Medical and Bio-Ethics**
A philosophical consideration of moral problems that arise in relation to medicine and biology, e.g. death, patient's rights and biological experimentation. Prerequisites: None.

### PHI244  Lecture 3 Credits 3 Periods
**Philosophy of Religion**
Religious language, the existence of God, miracles, and human destiny. Prerequisites: None. Cross-References: REL244.

### PHI111  Lecture 4 Credits 3 Periods / Lab 0 Credits Lab 3 Periods
**General Physics I**
SUN# PHY1111
Includes motion, energy, and properties of matter. PHY111 is recommended for preprofessional and suggested for certain other majors. Students may receive credit for only one of the following: PHY111 or PHY111AA. Prerequisites: MAT182 or MAT187 or MAT220 or MAT221 or eligibility for MAT220 as indicated by appropriate placement test score or one year high school Trigonometry with a grade of C or better or permission of Department or Division.

### PLC109  90 Clock Hours
**Phlebotomy Basic Skills**
Theory and practice of basic phlebotomy including laboratory test codes, equipment, and procedures. Prerequisites: admission into the Phlebotomy program.

### PLC111  90 Clock Hours
**Specimen Processing and Advanced Techniques in Phlebotomy**
Theory and practice of advanced techniques in phlebotomy and specimen processing including laboratory test codes, equipment, and procedures. Prerequisites: PLC109.

### PLC122  120 Clock Hours
**Phlebotomy Practicum**
Application of phlebotomy and specimen processing techniques in a clinical laboratory setting or health care environment. Prerequisites: PLC111.

### PMP120  175 Clock Hours
**Massage Therapy Basics**
A massage basics course covering: sanitation, hygiene, safety, contraindications, ethics, healthy therapeutic relationships, professional communication, overview of the human body (integumentary, muscular, and skeletal systems), healthcare terminology, muscle theory, client care, self-care, and Swedish Massage. Prerequisites: Admission into the Massage Therapy program.
PHC107  90 Clock Hours
Math and Dosages
Principles of household, metric and apothecary measurements, medical symbols and abbreviations. Emphasizes drug
dose unit calculations and drug pricing. Prerequisites: PHC102AB.

PHC114  200 Clock Hours
Pharmacy Tech Externship
This course will give students hands-on experience with patients, staff, and other pharmacy professionals while using
their skills and techniques they obtain from the pharmacy program coursework. Students are assigned to the site of an
approved pharmacy partner. This will prepare the student for the transition from school to industry, to gain valuable
work experience, and to provide an opportunity to network in the workforce. Externship hours are site specific and may
require attendance any day of the week, including during unscheduled days and times. Prerequisites: PHC102AB, PHC107,
PHC122.

PHC122  18 Clock Hours
Pharmacy Tech Certification Review
Pharmacy Technician Certification Board Exam. Preparation for the professional practice national examinations. Basic
study and test taking skills. Prerequisites: PHC107.

(PHI) PHILOSOPHY
PHI101 Lecture 3 Credits 3 Periods
Introduction to Philosophy  SUN# PHI1101
General consideration of human nature and the nature of the universe. Knowledge, perception, freedom and determinism,
and the existence of God. Prerequisites: None.

PHI103 Lecture 3 Credits 3 Periods
Introduction to Logic  SUN# PHI1103
Informal logic, logical fallacies, elementary symbolic logic, analysis of argument forms, and construction of proofs for
validity. Prerequisites: A grade of C or better in ENG101 or ENG107 or equivalent.

PHI105 Lecture 3 Credits 3 Periods
Introduction to Ethics  SUN# PHI1105
A survey of ethical theory in Western philosophy, including the major normative theories and selected metaethical
theories. Prerequisites: None.

PHI213 Lecture 3 Credits 3 Periods
Medical and Bio-Ethics
A philosophical consideration of moral problems that arise in relation to medicine and biology, e.g. death, patient's rights
and biological experimentation. Prerequisites: None.

PHI244 Lecture 3 Credits 3 Periods
Philosophy of Religion
Religious language, the existence of God, miracles, and human destiny. Prerequisites: None. Cross-References: REL244.

(PHY) PHYSICS
PHY101 Lec 4 Credits  Lec 3 Periods / Lab 0 Credits  Lab 3 Periods
Introduction to Physics
A survey of physics emphasizing applications of physics to modern life. Students may receive credit for only one of the
following: PHY101 or PHY101AA. Prerequisites: A grade of C or better in MAT090, or MAT091, or MAT092, or equivalent, or
satisfactory score on Math placement exam.

PHY111 Lec 4 Credits  Lec 3 Periods / Lab 0 Credits  Lab 3 Periods
General Physics I  SUN# PHY1111
Includes motion, energy, and properties of matter. PHY111 is recommended for preprofessional and suggested for certain
other majors. Students may receive credit for only one of the following: PHY111 or PHY111AA. Prerequisites: MAT182 or
MAT187 or MAT220 or MAT221 or eligibility for MAT220 as indicated by appropriate placement test score or one year high
school Trigonometry with a grade of C or better or permission of Department or Division.

PHY112 Lec 4 Credits  Lec 3 Periods / Lab 0 Credits  Lab 3 Periods
General Physics II  SUN# PHY1112
Includes electricity, electromagnetism, and modern physics. Prerequisites: A grade of C or better in PHY111.

(PLC) PHLEBOTOMY
PLC109  90 Clock Hours
Phlebotomy Basic Skills
Theory and practice of basic phlebotomy including laboratory test codes, equipment, and procedures. Prerequisites:
admission into the Phlebotomy program.

PLC111  90 Clock Hours
Specimen Processing and Advanced Techniques in Phlebotomy
Theory and practice of advanced techniques in phlebotomy and specimen processing including laboratory test codes,
equipment, and procedures. Prerequisites: PLC109.

PLC122  120 Clock Hours
Phlebotomy Practicum
Application of phlebotomy and specimen processing techniques in a clinical laboratory setting or health care
environment. Prerequisites: PLC111.

(PMP) MASSAGE THERAPY
PMP120  175 Clock Hours
Massage Therapy Basics
A massage basics course covering: sanitation, hygiene, safety, contraindications, ethics, healthy therapeutic relationships,
professional communication, overview of the human body ( integumentary, muscular, and skeletal systems), healthcare
terminology, muscle theory, client care, self-care, and Swedish Massage. Prerequisites: Admission into the Massage
Therapy program.
PMP121  175 Clock Hours  
Massage Therapy Advanced  
Advanced anatomy and massage, focusing in greater detail on the skeletal and muscular components and manipulations of the body. Students are taught all the bones and muscles of the body and introduced to the kinesiology that develops from their interactions. Deep-tissue, Thai massage, and reflexology are introduced. Recently learned skills will be practiced on the public during clinic with coaching. Prerequisites: PMP120 or Program Manager's permission.

PMP220  175 Clock Hours  
Massage Therapy Mastery I  
An advanced anatomy and massage course focusing in detail on the skeletal and muscular components and manipulations of the upper body. Students will review the bones and muscles of the upper body and the kinesiology that develops from their interactions. Corresponding deep-tissue massage for the upper body is taught in conjunction with the advanced anatomy to ensure its practical application. Integration of deep tissue, Thai massage, myofascial, and structural massage are emphasized. Subjective, objective, assessment, and plan (S.O.A.P.) notes are introduced. The course concludes with two weeks of supervised clinic with coaching. Prerequisites: PMP121 or Program Manager's permission.

PMP221  175 Clock Hours  
Massage Therapy Mastery II  
An advanced anatomy and massage course focusing in detail on the skeletal and muscular components and manipulations of the lower body. Students will review all of the bones and muscles of the lower body and the kinesiology that develops from their interactions. Corresponding deep-tissue massage for the lower body is taught in conjunction with the advanced anatomy to ensure its practical application. Students combine all of their program skills, integrating anatomy, kinesiology, concepts, theories, and techniques to properly assess clients and apply critical thinking in tailoring treatments to individuals with documentation. Clients with unique needs are covered such as athletes, expecting mothers, infants, older adults, obese individuals, people with disabilities, and end of life care. Persons with common injuries and conditions are also covered, teaching specific strategies and protocols to address them. Extensive curricular skills taught in the program of massage therapy will continue to be reinforced while an exit plan is created for the student's entrance into the industry. The course concludes with two weeks of supervised clinic with coaching to gain practical experience working on the general public and applying the assessment/treatment approaches focused on in the course. Prerequisites: PMP220 or Program Manager's permission.

(PON) PERIOPERATIVE NURSING  

PON210  Lecture  3 Credits  3 Periods  
Perioperative Principles I  
Role and responsibilities of the professional nurse in the perioperative setting. Team concepts, patient care, nursing process and impact of quality assurance. Role of Association of Operating Room Nurses Standards of Practice. Prerequisites: Acceptance into the Operating Room Nursing program or permission of Department or Division. Corequisites: PON214.

PON212  Lecture  3 Credits  3 Periods  
Perioperative Principles II  
Common pathogenic organisms and methods of sanitation/sterilization. Instruments, procedures, intervention measures related to the operating room. State and federal regulating agencies. Moral and ethical issues. Prerequisites: A grade of C or better in PON210 or permission of Department or Division. Corequisites: PON214.

PON214  Lab  4 Credits  9.5 Periods  
Perioperative Laboratory  

Course Listings 2019-2020  
PON218  Lab  3 Credits  15 Periods  
Perioperative Clinical Practice I  
Application of the nursing process in care of surgical patients during the perioperative period. Statements of competency established by the Association of Operating Room Nurses. Prerequisites: A grade of C or better in PON214.

PON220  Lab  3 Credits  15 Periods  
Perioperative Clinical Practice II  
Application of the nursing process in care of surgical patients during the perioperative period. Statements of competency established by the Association of Operating Room Nurses. Prerequisites: A grade of C or better in PON214 or permission of Department or Division.

(PSG) POLYSOMNOGRAPHIC TECHNOLOGY  

PSG140  Lec  4 Credits  /  Lec  3 Periods  /  Lab  0 Credits  /  Lab  3 Periods  
Respiratory Care Fundamentals and Physiology for Polysomnography  
Introduction to the development and implementation of prescribed care plans for sleep-related breathing disorders. Administration of basic respiratory therapeutic modalities for sleep-related breathing disorders and non-invasive assisted breathing. Use and maintenance of all forms of positive airway pressure therapy with specific knowledge of how algorithms function when using advanced positive pressure therapies. Basic respiratory physiology as it relates to sleep-related breathing disorders. Prerequisites: Admission to the Polysomnographic Technology program.

PSG150  Lecture  3 Credits  3 Periods  
Introduction to Sleep Medicine  
Introduction to the fundamental concepts of polysomnography, sleep technology and sleep medicine. Emphasis on nomenclature, technical and medical roles, normal sleep, sleep disorders, and professional organizations and resources. Prerequisites: Admission into the Polysomnography Technology program. Corequisites: PSG150L.

PSG150LL  Lab  1 Credit  3 Periods  
Introduction to Sleep Medicine Laboratory  
Introduction to the fundamental concepts of polysomnography, sleep technology and sleep medicine in the laboratory setting. Emphasis on nomenclature, technical and medical roles, normal sleep, sleep disorders, and professional organizations and resources. Prerequisites: Admission to the Polysomnography Technology program. Corequisites: PSG150.

PSG160  Lecture  2 Credits  2 Periods  
Polysomnographic Procedures  
Practical application of clinical procedures germane to the performance of polysomnography. Emphasis on patient assessment and communications, pre-test preparations, patient hook-up, instrument calibration and operation, test termination, cleanup and troubleshooting. Prerequisites: Admission into the Polysomnography Technology program. Corequisites: PSG160L.

PSG160LL  Lab  1 Credit  3 Periods  
Polysomnographic Procedures Laboratory  
Practical application of clinical procedures germane to the performance of polysomnography. Emphasis on patient assessment and communications, pre-test preparations, patient hook-up, instrument calibration and operation, test termination, cleanup and troubleshooting. Prerequisites: Admission to the Polysomnography Technology program. Corequisites: PSG160.
### (PON) PERIOPERATIVE NURSING

**PON210** Lecture 3 Credits 3 Periods  
**Perioperative Principles I**  
Role and responsibilities of the professional nurse in the perioperative setting. Team concepts, patient care, nursing process and impact of quality assurance. Role of Association of Operating Room Nurse Standards of Practice. Prerequisites: Acceptance into the Operating Room Nursing program or permission of Department or Division. Corequisites: PON214.

**PON212** Lecture 3 Credits 3 Periods  
**Perioperative Principles II**  
Common pathogenic organisms and methods of sanitation/sterilization. Instruments, procedures, intervention measures related to the operating room. State and federal regulating agencies. Moral and ethical issues. Prerequisites: A grade of C or better in PON210 or permission of Department or Division. Corequisites: PON214.

**PON214** Lab 4 Credits 9.5 Periods  
**Perioperative Laboratory**  

### (PSG) POLYSOMNOGRAPHIC TECHNOLOGY

**PSG140** Lec 4 Credits Lec 3 Periods / Lab 0 Credits Lab 3 Periods  
**Respiratory Care Fundamentals and Physiology for Polysomnography**  
Introduction to the development and implementation of prescribed care plans for sleep-related breathing disorders. Administration of basic respiratory therapeutic modalities for sleep-related breathing disorders and non-invasive assisted breathing. Use and maintenance of all forms of positive airway pressure therapy with specific knowledge of how algorithms function when using advanced positive pressure therapies. Basic respiratory physiology as it relates to sleep-related breathing disorders. Prerequisites: Admission to the Polysomnographic Technology program.

**PSG150** Lecture 3 Credits 3 Periods  
**Introduction to Sleep Medicine**  
Introduction to the fundamental concepts of polysomnography, sleep technology and sleep medicine. Emphasis on nomenclature, technical and medical roles, normal sleep, sleep disorders, and professional organizations and resources. Prerequisites: Admission into the Polysomnography Technology program. Corequisites: PSG150LL.

**PSG150LL** Lab 1 Credit 3 Periods  
**Introduction to Sleep Medicine Laboratory**  
Introduction to the fundamental concepts of polysomnography, sleep technology and sleep medicine in the laboratory setting. Emphasis on nomenclature, technical and medical roles, normal sleep, sleep disorders, and professional organizations and resources. Prerequisites: Admission to the Polysomnography Technology program. Corequisites: PSG150.

**PSG160** Lecture 2 Credits 2 Periods  
**Polysomnographic Procedures**  
Practical application of clinical procedures germane to the performance of polysomnography. Emphasis on patient assessment and communications, pre-test preparations, patient hook-up, instrument calibration and operation, test termination, cleanup and troubleshooting. Prerequisites: Admission into the Polysomnography Technology program. Corequisite: PSG160LL.

**PSG160LL** Lab 1 Credit 3 Periods  
**Polysomnographic Procedures Laboratory**  
Practical application of clinical procedures germane to the performance of polysomnography. Emphasis on patient assessment and communications, pre-test preparations, patient hook-up, instrument calibration and operation, test termination, cleanup and troubleshooting. Prerequisites: Admission to the Polysomnography Technology program. Corequisites: PSG160.
PSG165 Lab 3 Credits 15 Periods
Clinical Polysomnography
Introduction to a sleep disorders center, observation of a center conducting polysomnography, and participation in performance of associated procedures. Emphasis on patient preparation, testing protocols, instrument calibration and operation, documentation, and patient interactions. Prerequisites: Admission into the Polysomnography Technology program.

PSG170 Lecture 2 Credits 2 Periods
Sleep Therapeutics
Review of sleep therapies to include medical treatment of insomnia, hypersomnia, restless legs syndrome, periodic limb movement disorder, rapid eye movement sleep behavior disorder, parasomnias, and the use of positive airway pressure therapy and/or oxygen therapy to treat sleep-disordered breathing. Prerequisites: Admission into the Polysomnography Technology program.

PSG170LL Lab 1 Credit 3 Periods
Sleep Therapeutics Laboratory
Perform sleep therapies to include medical treatment of insomnia, hypersomnia, restless legs syndrome, periodic limb movement disorder, rapid eye movement sleep behavior disorder, parasomnias, the use of positive airway pressure therapy and/or oxygen therapy to treat sleep-disordered breathing. Prerequisites: Admission to the Polysomnography Technology program. Corequisites: PSG170LL.

PSG250 Lecture 2 Credits 2 Periods
Record Scoring
Polysomnographic record scoring including visual, arousal, cardiac, movement, and respiratory scoring rules outlined by the American Academy of Sleep Medicine. Polysomnogram report generation and calculations, technical and digital specifications, multiple sleep latency test/maintenance of wakefulness test scoring and reporting, and archive and data storage, abnormal polysomnographic record events, and artifact recognition. Prerequisites: Admission into the Polysomnography Technology program. Corequisites: PSG250LL.

PSG250LL Lab 1 Credit 3 Periods
Record Scoring Laboratory
Polysomnographic record scoring including visual, arousal, cardiac, movement, and respiratory scoring rules outlined by the American Academy of Sleep Medicine (AASM). Polysomnogram report generation and calculations, technical and digital specifications, multiple sleep latency test/maintenance of wakefulness test scoring and reporting, and archive and data storage, abnormal polysomnographic record events, and artifact recognition. Prerequisites: Admission into the Polysomnography Technology program. Corequisites: PSG250LL.

PSG260 Lecture 2 Credits 2 Periods
Special Topics in Polysomnography
Specialized techniques, equipment and procedures used in polysomnography. Emphasis on infant, pediatric and geriatric populations, disabled and emotionally/mentally challenged. Polysomnograms with legal implications, research, and less commonly performed procedures. Prerequisites: Admission into the Polysomnography Technology program.

PSG265 Lab 2 Credits 10 Periods
Clinical Polysomnography II
Participation in clinical polysomnography testing. Emphasis on patient preparation, troubleshooting, therapeutics, proper documentation, record review, scoring and report generation. Prerequisites: Admission into the Polysomnography Technology program.

PSG275 Lab 3 Credits 15 Periods
Clinical Polysomnography III
Clinical polysomnography testing. Emphasis on independent function and decision making, time management, record review, scoring and report preparation. Prerequisites: Admission into the Polysomnography Technology program.

PSG282AA Lab 1 Credit 1 Period
Volunteerism for Polysomnographic Technology: Service Learning Experience
Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups. PSG282AA may be repeated for a total of six (6) credit hours. Standard grading available according to procedures outlined in catalog. Prerequisites: Permission of Instructor.

(PSY) PSYCHOLOGY

PSY101 Lecture 3 Credits 3 Periods
Introduction to Psychology
SUN# PSY1101
To acquaint the student with basic principles, methods and fields of psychology such as learning, memory, emotion, perception, physiological, developmental, intelligence, social and abnormal. Prerequisites: None.

PSY132 Lecture 3 Credits 3 Periods
Psychology and Culture
Presents current knowledge about human diversity in behavior and culture using examples from a variety of contexts within western and global societies. Highlights topics in cross-cultural psychology, such as intergroup relations, diverse cognitive styles, ethnocentrism, gender, personality, emotion, language, communication, work and health. The role of enculturation throughout the lifespan will be explored to increase awareness of how behavioral and cognitive principles affect interactions in a multicultural world. Prerequisites: None.

PSY230 Lecture 3 Credits 3 Periods
Introduction to Statistics
An introduction to basic concepts in descriptive and inferential statistics, with emphasis upon application to psychology. Consideration given to the methods of data collection, sampling techniques, graphing of data, and the statistical evaluation of data collected through experimentation. Required of psychology majors. Prerequisites: (A grade of C or better in PSY101 and MAT092 or higher MAT course) or (a grade of C or better in PSY101 and eligibility for MAT112 or higher as indicated by appropriate mathematics placement test score) or permission of Instructor.

PSY240 Lecture 3 Credits 3 Periods
Developmental Psychology
Human development from conception through adulthood. Includes: physical, cognitive, emotional and social capacities that develop at various ages. Recommended for students majoring in nursing, education, pre-med, and psychology. Prerequisites: PSY101 with a grade of C or better, or permission of the Instructor.

PSY290AB Lecture 4 Credits 3 Periods / Lab 0 Credits 3 Periods
Research Methods
SUN# PSY2290
Planning, execution, analysis, and written reporting of psychological research using American Psychological Association guidelines (APA). Surveys the literature, procedures, and instruments in representative areas of psychological research. A grade of C or better required in all Prerequisites. Prerequisites: ENG101 or ENG107. Prerequisites or Corequisites: PSY230 or permission of Instructor.
Course Listings 2019-2020

PSG165  Lab  3 Credits  15 Periods
Clinical Polysomnography
Introduction to a sleep disorders center, observation of a center conducting polysomnography, and participation in performance of associated procedures. Emphasis on patient preparation, testing protocol, instrument calibration and operation, documentation, and patient interactions. Prerequisites: Admission into the Polysomnography Technology program.

PSG170  Lecture  2 Credits  2 Periods
Sleep Therapeutics
Review of sleep therapies to include medical treatment of insomnia, hypersomnia, restless legs syndrome, periodic limb movement disorder, rapid eye movement sleep behavior disorder, parasomnias, and the use of positive airway pressure therapy and/or oxygen therapy to treat sleep-disordered breathing. Prerequisites: Admission into the Polysomnography Technology program. Corequisites: PSG170LL.

PSG170LL  Lab  1 Credit  3 Periods
Sleep Therapeutics Laboratory
Perform sleep therapies to include medical treatment of insomnia, hypersomnia, restless legs syndrome, periodic limb movement disorder, rapid eye movement sleep behavior disorder, parasomnias, the use of positive airway pressure therapy and/or oxygen therapy to treat sleep-disordered breathing. Prerequisites: Admission to the Polysomnography Technology program. Corequisites: PSG170.

PSG250  Lecture  2 Credits  2 Periods
Record Scoring
Polysomnographic record scoring including visual, arousal, cardiac, movement, and respiratory scoring rules outlined by the American Academy of Sleep Medicine. Polysomnogram report generation and calculations, technical and digital specifications, multiple sleep latency test/maintenance of wakefulness test scoring and reporting, and archive and data storage, abnormal polysomnographic record events, and artifact recognition. Prerequisites: Admission into the Polysomnography Technology program. Corequisites: PSG250LL.

PSG250LL  Lab  1 Credit  3 Periods
Record Scoring Laboratory
Polysomnographic record scoring including visual, arousal, cardiac, movement, and respiratory scoring rules outlined by the American Academy of Sleep Medicine (AASM). Polysomnogram report generation and calculations, technical and digital specifications, multiple sleep latency test/maintenance of wakefulness test scoring and reporting, and archive and data storage, abnormal polysomnographic record events, and artifact recognition. Prerequisites: Admission into the Polysomnography Technology program. Corequisites: PSG250.

PSG260  Lecture  2 Credits  2 Periods
Special Topics in Polysomnography
Specialized techniques, equipment and procedures used in polysomnography. Emphasis on infant, pediatric and geriatric populations, disabled and emotionally/mentally challenged, Polysomnograms with legal implications, research, and less commonly performed procedures. Prerequisites: Admission into the Polysomnography Technology program.

PSG265  Lab  2 Credits  10 Periods
Clinical Polysomnography II
Participation in clinical polysomnography testing. Emphasis on patient preparation, troubleshooting, therapeutics, proper documentation, record review, scoring and report generation. Prerequisites: Admission into the Polysomnography Technology program.

Course Listings 2019-2020

PSG275  Lab  3 Credits  15 Periods
Clinical Polysomnography III
Clinical polysomnography testing. Emphasis on independent function and decision making, time management, record review, scoring and report preparation. Prerequisites: Admission into the Polysomnography Technology program.

PSG282AA  Lab  1 Credit  1 Period
Volunteerism for Polysomnographic Technology: Service Learning Experience
Service learning field experience within private/public agencies, educational institution, and citizen volunteer groups. PSG282AA may be repeated for a total of six (6) credit hours. Standard grading available according to procedures outlined in catalog. Prerequisites: Permission of Instructor.

(PSY) PSYCHOLOGY

PSY101  Lecture  3 Credits  3 Periods
Introduction to Psychology
PSY101 PSYCHOLOGY
PSY101
To acquaint the student with basic principles, methods and fields of psychology such as learning, memory, emotion, perception, physiological, developmental, intelligence, social and abnormal. Prerequisites: None.

PSY132  Lecture  3 Credits  3 Periods
Psychology and Culture
PSY132
Presents current knowledge about human diversity in behavior and culture using examples from a variety of contexts within western and global societies. Highlights topics in cross-cultural psychology, such as intergroup relations, diverse cognitive styles, ethnocentrism, gender, personality, emotion, language, communication, work and health. The role of enculturation throughout the lifespan will be explored to increase awareness of how behavioral and cognitive principles affect interactions in a multicultural world. Prerequisites: None.

PSY230  Lecture  3 Credits  3 Periods
Introduction to Statistics
PSY230
An introduction to basic concepts in descriptive and inferential statistics, with emphasis upon application to psychology. Consideration given to the methods of data collection, sampling techniques, graphing of data, and the statistical evaluation of data collected through experimentation. Required of psychology majors. Prerequisites: (A grade of C or better in PSY101 and MAT092 or higher MAT course) or (a grade of C or better in PSY101 and eligibility for MAT112 or higher as indicated by appropriate mathematics placement test score) or permission of instructor.

PSY240  Lecture  3 Credits  3 Periods
Developmental Psychology
PSY240
Human development from conception through adulthood. Includes: physical, cognitive, emotional and social capacities that develop at various ages. Recommended for students majoring in nursing, education, pre-med, and psychology. Prerequisites: PSY101 with a grade of C or better, or permission of the Instructor.

PSY290AB  Lec  4 Credits  Lec  3 Periods  /  Lab  0 Credits  Lab  3 Periods
Research Methods
PSY290AB
Planning, execution, analysis, and written reporting of psychological research using American Psychological Association guidelines (APA). Surveys the literature, procedures, and instruments in representative areas of psychological research. A grade of C or better required in all Prerequisites. Prerequisites: ENG101 or ENG107. Prerequisites or Corequisites: PSY230 or permission of Instructor.
Course Listings 2019-2020

(PTA) PHYSICAL THERAPY ASSISTING

PTA101  Lecture  1.5 Credits  1.5 Periods  
Survey of Physical Therapy

History of physical therapy. Purpose, benefits, and goals of the Arizona and American Physical Therapy Associations (AAPT). Roles and responsibilities of physical therapists (PT) and physical therapist assistants (PTA). Patient care, legal issues, principles of physical therapy treatment, education requirements, and functions of the American Physical Therapy Association. Clinical practice settings used in the provision of physical therapy services. Common medical conditions and injuries treated by PTs and PTAs. Emerging opportunities in the practice of physical therapy. Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.

PTA102  Lecture  1 Credit  1 Period  
Structured Physical Therapist Assisting Review

Structured physical therapist assisting tutorial assistance and physical therapist assisting study skills related to physical therapist assisting courses. Physical therapist assisting process and critical thinking application skills emphasized. PTA102 offered as Credit (P) No credit (Z) basis. PTA102 may be repeated for a total of eight (8) credit hours. Prerequisites: None. Corequisites: Enrollment in the Physical Therapist Assisting program or permission of Department Chair.

PTA103  Lecture  3 Credits  3 Periods  
Kinesiology

Physical principles of human motion. Emphasis on structure, movement, and stability of specific joints. Normal and abnormal human locomotion. Stabilizing and motion producing forces upon extremities and the spine including muscles, ligaments, and cartilage. Discussion of common joint deformities. Kinesiological analysis of functional movement of the human body. Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.

PTA104  Lab  1.5 Credits  4.5 Periods  
Musculo-Skeletal Assessment Techniques

Theory and principles of goniometry and manual muscle testing. Measure range of motion of joints and strength of muscles of the head, face, neck, trunk and extremities. Normal range of motion of the spine and extremities. Assess posture and common postural deviations. Palpate and identify pertinent bony and soft tissue structures. Document results of goniometric measurement, muscle testing, palpation and posture assessment. Perform data collection in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist. Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.

PTA200  Lec 4 Credits  Lec 2 Periods  /  Lab 0 Credits  Lab 6 Periods  
Patient Mobility Techniques

Theory, principles and practice of proper body mechanics. Principles and techniques of gait training, bed mobility and transfers, wheelchair mobility. Theory, principles, and techniques of therapeutic exercise. Patient instruction, data collection, assistive devices and equipment used by the physical therapist assistants and their patients. Safety and first aid in physical therapy practice settings including contraindications for therapeutic interventions. Document physical therapy interventions. Perform physical therapy interventions in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist. Prerequisites: A grade of C or better in (PTA101, PTA103, and PTA104) or permission of the Program Director.

PTA202  Lec 5 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 6 Periods  
Therapeutic Modalities

Stages of inflammation responses and tissue repair. Theories on pain. Guidelines for patient positioning and safety. Physiological effects of therapeutic modalities. Principles and application of thermal agents. Apply superficial and deep thermal agents, cryotherapy, ultrasound, electromagnetic radiation, massage, hydrotherapy, light, intermittent venous compression therapies, and traction. Indications and contraindications for treatment methods. Concepts in research in physical therapy. Document physical therapy interventions. Perform physical therapy interventions including relevant data collection in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist. Prerequisites: A grade of C or better in (PTA101, PTA103, and PTA104) or permission of the Program Director.

PTA203  Lecture  3 Credits  3 Periods  
Clinical Pathology

Terminology and definitions used in discussion of human pathology. Disease processes frequently encountered in physical therapy practice. Functional anatomy, select medical tests for diagnoses, and medication and effects in providing physical therapy. Principles of disease prevention. Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.

PTA205  Lecture  1.5 Credits  1.5 Periods  
Communication in Physical Therapy

Communication skills in the physical therapy setting. Self-image in communication. Active listening, responding to problems, body language, patient interview skills. Communicating with chronically ill and dying patients and their families. Communicating with persons with disabilities. Cultural differences in communication and views of health care. Prerequisites: Admission to the Physical Therapist Assisting program or permission of Department or Division.

PTA206  Lab  3 Credits  15 Periods  
Clinical Practicum I

Clinical experience with advanced beginner or higher level of performance for physical therapist assisting students. Application of physical therapy skills and techniques in specific clinical settings including outpatient, hospital, rehabilitation and skilled nursing care. Prerequisites: A grade of C or better in (PTA200, PTA202, PTA203, and PTA205), or permission of the Program Director. Corequisites: PTA207.

PTA207  Lecture  1 Credit  1 Period  
Clinical Practicum Seminar I

Integration of non-clinical aspects of clinical practicums with clinical performance in Clinical Practicum I. Emphasis on clinical journaling, in-service and case presentations, and documentation of patient care interventions. Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director. Corequisites: PTA206.

PTA208  Lec 5 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 6 Periods  
Rehabilitation of Special Populations

Rehabilitation strategies for brain injured patients. Neurodevelopmental treatment emphasized. Theories and alternative physical therapy treatment for neuromotor impaired patients. Clinical applications and treatment of patients. Proprioceptive neuromuscular facilitation (PNF), cardiopulmonary rehabilitation, spinal cord injury and amputee management, and prosthetics/orthotics. Motor development and changes across the lifespan including developmental motor milestones and normal reflexes and reactions. Emphasis on proficiency in hands-on techniques. Prerequisites: A grade of C or better in (PTA200, PTA202, PTA203, and PTA205), or permission of the Program Director.

PTA210  Lec 4 Credits  Lec 3 Periods  /  Lab 0 Credits  Lab 3 Periods  
Orthopedic Physical Therapy

**Course Listings 2019-2020**

**PTA PHYSICAL THERAPY ASSISTING**

**PTA101 Lecture 1.5 Credits 1.5 Periods**  
Survey of Physical Therapy  
History of physical therapy. Purpose, benefits, and goals of the Arizona and American Physical Therapy Associations (APTA). Roles and responsibilities of physical therapists (PT) and physical therapist assistants (PTA). Patient care, legal issues, principles of physical therapy treatment, education requirements, and functions of the American Physical Therapy Association. Clinical practice settings used in the provision of physical therapy services. Common medical conditions and injuries treated by PTs and PTAs. Emerging opportunities in the practice of physical therapy. Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.

**PTA102 Lecture 1 Credit 1 Period**  
Structured Physical Therapist Assisting Review  
Structured physical therapist assisting tutorial assistance and physical therapist assisting study skills related to physical therapist assisting courses. Physical therapist assisting process and critical thinking application skills emphasized. PTA102 offered as Credit (P) No credit (Z) basis. PTA104 may be repeated for a total of eight (8) credit hours. Prerequisites: None. Corequisites: Enrollment in the Physical Therapist Assisting program or permission of Department Chair.

**PTA103 Lecture 3 Credits 3 Periods**  
Kinesiology  
Physical principles of human motion. Emphasis on structure, movement, and stability of specific joints. Normal and abnormal human locomotion. Stabilizing and motion producing forces upon extremities and the spine including muscles, ligaments, and cartilage. Discussion of common joint deformities. Kinesiological analysis of functional movement of the human body. Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.

**PTA104 Lab 1.5 Credits 4.5 Periods**  
Musculo-Skeletal Assessment Techniques  
Theory and principles of goniometry and manual muscle testing. Measure range of motion of joints and strength of muscles of the head, face, neck, trunk and extremities. Normal range of motion of the spine and extremities. Assess posture and common postural deviations. Palpate and identify pertinent bony and soft tissue structures. Document results of goniometric measurement, pain testing, palpation and posture assessment. Perform data collection in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist. Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.

**PTA200 Lec 4 Credits Lec 2 Periods / Lab 0 Credits Lab 6 Periods**  
Patient Mobility Techniques  
Theory, principles and practice of proper body mechanics. Principles and techniques of gait training, bed mobility and transfers, wheelchair mobility. Theory, principles, and techniques of therapeutic exercise. Patient instruction, data collection, assistive devices and equipment used by the physical therapist assistants and their patients. Safety and first aid in physical therapy practice settings including contraindications for therapeutic interventions. Document physical therapy interventions. Perform physical therapy interventions in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist. Prerequisites: A grade of C or better in (PTA101, PTA103, and PTA104) or permission of the Program Director.

**PTA202 Lec 5 Credits Lec 3 Periods / Lab 0 Credits Lab 6 Periods**  
Therapeutic Modalities  
Stages of inflammation responses and tissue repair. Theories on pain. Guidelines for patient positioning and safety. Physiological effects of therapeutic modalities. Principles and application of thermal agents. Apply superficial and deep thermal agents, cryotherapy, ultrasound, electromagnetic radiation, massage, hydrotherapy, light, intermittent venous compression therapies, and traction. Indications and contraindications for treatment methods. Concepts in research in physical therapy. Document physical therapy interventions. Perform physical therapy interventions including relevant data collection in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist. Prerequisites: A grade of C or better in (PTA101, PTA103, and PTA104) or permission of the Program Director.

**PTA203 Lecture 3 Credits 3 Periods**  
Clinical Pathology  
Terminology and definitions used in discussion of human pathology. Disease processes frequently encountered in physical therapy practice. Functional anatomy, select medical tests for diagnoses, and medication and effects in providing physical therapy. Principles of disease prevention. Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.

**PTA205 Lecture 1.5 Credits 1.5 Periods**  
Communication in Physical Therapy  
Communication skills in the physical therapy setting. Self-image in communication. Active listening, responding to problems, body language, patient interview skills. Communicating with chronically ill and dying patients and their families. Communicating with persons with disabilities. Cultural differences in communication and views of health care. Prerequisites: Admission to the Physical Therapist Assisting program or permission of Department or Division.

**PTA206 Lab 3 Credits 15 Periods**  
Clinical Practicum I  
Clinical experience with advanced beginner or higher level of performance for physical therapist assisting students. Application of physical therapy skills and techniques in specific clinical settings including outpatient, hospital, rehabilitation and skilled nursing care. Prerequisites: A grade of C or better in (PTA200, PTA202, PTA203, and PTA205), or permission of the Program Director. Corequisites: PTA207.

**PTA207 Lecture 1 Credit 1 Period**  
Clinical Practicum Seminar I  
Integration of non-clinical aspects of clinical practicums with clinical performance in Clinical Practicum I. Emphasis on clinical journaling, in-service and case presentations, and documentation of patient care interventions. Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director. Corequisites: PTA206.

**PTA208 Lec 5 Credits Lec 3 Periods / Lab 0 Credits Lab 6 Periods**  
Rehabilitation of Special Populations  
Rehabilitation strategies for brain injured patients. Neurodevelopmental treatment emphasized. Theories and alternative physical therapy treatment for neurologically impaired patients. Clinical applications and treatment of patients. Proprioceptive neuromuscular facilitation (PNF), cardiopulmonary rehabilitation, spinal cord injury and amputee management, and prosthetics/orthotics. Motor development and changes across the lifespan including developmental motor milestones and normal reflexes and reactions. Emphasis on proficiency in hands-on techniques. Prerequisites: A grade of C or better in (PTA200, PTA202, PTA203, and PTA205), or permission of the Program Director.

**PTA210 Lec 4 Credits Lec 3 Periods / Lab 0 Credits Lab 3 Periods**  
Orthopedic Physical Therapy  
including relevant data collection in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist. Prerequisites: A grade of C or better in (PTA206 and PTA207) or permission of the Program Director.

**PTA214**  Lec 2.5 Credits  Lec 1.5 Periods / Lab 0 Credits  Lab 3 Periods
**Electromodalties**
Electrical currents for physical therapy. Types of human muscular contractions. Safety stressed. Application of electrical currents for physical therapy. Uses and implications of electrical nerve tests. Biophysical effects of transcutaneous electrical nerve stimulation. Use of low volt, high volt, and interferential electrical stimulation devices. Neuromuscular electrical stimulation (NMES). Use of biofeedback in physical therapy. Perform physical therapy interventions using including relevant data collection in a time efficient manner following the plan of care established by the supervising physical therapist. Communicate effectively with patients and the supervising physical therapist. Prerequisites: A grade of C or better in (PTA206 and PTA207) or permission of the Program Director.

**PTA215**  Lecture 1 Credit 1 Period
**Wound Care for the Physical Therapist Assistant**
Introduction to current concepts in wound care management techniques for the physical therapist assistant including skin anatomy and physiology, principles of healing, types of wounds, and therapeutic interventions. Prerequisites: Admission to the Physical Therapist Assisting program or permission of Department or Division.

**PTA217**  Lecture 2 Credits 2 Periods
**Clinical Neurology**
Anatomy and function of the brain, spinal cord and peripheral nervous system. Review of motor and sensory innervation and spinal tracts. Specific diseases of the central and peripheral nervous systems related to the physical therapy plan of care. Emphasis on clinical signs and symptoms of neurological disorders. Prerequisites: A grade of C or better in (PTA101, PTA103, PTA104, PTA200, PTA203, and PTA206) or permission of the Program Director.

**PTA230**  Lecture 2 Credits 2 Periods
**Physical Therapy Seminar**

**PTA240**  Lec + Lab 1 Credit 1 Period
**Peripheral Joint Mobilization Techniques for the Physical Therapist Assistant**
Peripheral joint mobilization techniques for the upper and lower extremity joints. Concepts, indications, and contraindications. Documentation. Statutes and policies regarding joint mobilizations. Prerequisites: Certification or licensure as a physical therapist assistant and six months clinical practice.

**PTA280**  Lab 3 Credits 15 Periods
**Clinical Practicum II**
Clinical experience requiring an intermediate or higher level of clinical performance by the physical therapist assisting students. Application of physical therapy skills and techniques in various clinical settings including outpatient, hospital, rehabilitation and skilled nursing. Prerequisites: A grade of C or better in (PTA208, PTA210, PTA214, and PTA217), or permission of Program Director. Corequisites: PTA281.
Course Listings 2019-2020

Electromodalties

PTA214 Lec 2.5 Credits Lec 1.5 Periods / Lab 0 Credits Lab 3 Periods


Wound Care for the Physical Therapist Assistant

PTA215 Lecture 1 Credit 1 Period

Introduction to current concepts in wound care management techniques for the physical therapist assistant including skin anatomy and physiology, principles of healing, types of wounds, and therapeutic interventions. Prerequisites: Admission to the Physical Therapist Assisting program or permission of the Program Director.

Clinical Neurology

PTA217 Lecture 2 Credits 2 Periods

Anatomy and function of the brain, spinal cord and peripheral nervous system. Review of motor and sensory innervation and spinal tracts. Specific diseases of the central and peripheral nervous systems related to the physical therapy plan of care. Emphasis on clinical signs and symptoms of neurological disorders. Prerequisites: A grade of C or better in (PTA101, PTA103, PTA104, PTA200, PTA203, and PTA206) or permission of the Program Director.

Electromodalties

PTA230 Lecture 2 Credits 2 Periods


Peripheral Joint Mobilization Techniques for the Physical Therapist Assistant

PTA240 Lec + Lab 1 Credit 1 Period

Peripheral joint mobilization techniques for the upper and lower extremity joints. Concepts, indications, and contraindications. Documentation. Statutes and policies regarding joint mobilizations. Prerequisites: Certification or licensure as a physical therapist assistant and six months clinical practice.

Clinical Practicum II

PTA280 Lab 3 Credits 15 Periods

Clinical experience requiring an intermediate or higher level of clinical performance by the physical therapist assisting students. Application of physical therapy skills and techniques in various clinical settings including outpatient, hospital, rehabilitation and skilled nursing. Prerequisites: A grade of C or better in (PTA208, PTA210, PTA214, and PTA217), or permission of Program Director. Corequisites: PTA281.
Course Listings 2019-2020

(REC) RECREATION
REC120 Lecture 3 Credits 3 Periods
Leisure and the Quality of Life
Overview of the historical, psychological, social, and cultural aspects of play, leisure, and recreation and their role in contemporary society. Nature of play and leisure behavior in human development within different cultures and the contribution play, recreation, and leisure make to the quality of life for individuals in today's society. Prerequisites: None.

(REL) RELIGIOUS STUDIES
REL100 Lecture 3 Credits 3 Periods
World Religions
The development of various religions from the prehistoric to modern times. Political, economic, social and geographic relationships among world religions. Consideration of both Eastern and Western religions. Prerequisites: None.

(RES) RESPIRATORY CARE
RES109 Lecture 0.5 Credits 0.5 Periods
CPR for Health Care Provider
Current American Heart Association standards for one and two rescuer cardiopulmonary resuscitation (CPR) and obstructed airway procedures on the adult, infant, and pediatric victim. Use of automatic, external defibrillation and resuscitation equipment. Prerequisites: None. Cross-References: HCC109.

RES118 Lab 0.5 Credits 1.5 Periods
Vascular Access in Respiratory Care Practice
Scope of practice and regulations governing vascular access. Anatomy and physiology of the vascular system. Occupational Safety and Health Administration (OSHA) guidelines. Theory and practice of vascular access as designated by Infusion Nursing Standards (INS). Prerequisites: None. Corequisites: RES130 or permission of the Program Director.

RES130 Lec 5 Credits Lec 3 Periods / Lab 0 Credits Lab 6 Periods
Respiratory Care Fundamentals I
Review of existing clinical data and recommendations. Data required to determine appropriateness of prescribed respiratory care plan. Administration of basic respiratory care therapeutics to include medical gas administration, oxygen therapy administration, and humidity/aerosol therapy administration. Use and maintenance of select respiratory equipment. Use of communication skills during interactions with members of the health care team and patients. Ethical, legal and professional work behaviors. Prerequisites: Admission into the Respiratory Care program.

RES131 Lecture 1 Credit 1 Period
Infection Control for Respiratory Care
Techniques and procedures used by Respiratory Therapist to clean and sterilize equipment and environments, and prevent the transmission of nosocomial and other healthcare related infections. Prerequisites: Admission into the Respiratory Care program or admission into the Polysomnographic Technology program.

RES133 Lecture 3 Credits 3 Periods
Respiratory Care Clinical Seminar
Clinical application of concurrent respiratory care course work with emphasis on professionalism, medical record evaluation, communication, universal precaution, infection control, patient safety, patient assessment, age-related care, cultural competence, routine hospital regulations, patient education and introduction to respiratory disease and treatment. Prerequisites: Admission into the Respiratory Care program.

RES134 Lecture 2 Credits 2 Periods
Respiratory Care Pharmacology I
Pharmacologic principles related to the treatment of acute and chronic pulmonary disease. Information on bronchodilators, mucokinetics, surfactants, anti-inflammatory, antiasthmatic and anti-infective agents to include mechanism of action, general drug information, side effects, and respiratory care considerations. Prerequisites: Admission into the Respiratory Care program.

RES136 Lecture 3 Credits 3 Periods
Applied Biophysics for Respiratory Care
Physical principles specific to ventilation. Laws of physics and their relationship to the respiratory system and the application of respiratory care equipment. Role of respiratory care during specific diagnostic procedures. Use of mathematical formulae. Prerequisites: Admission into the Respiratory Care program.

RES140 Lec 5 Credits Lec 3 Periods / Lab 0 Credits Lab 6 Periods
Respiratory Care Fundamentals II
Continuation of basic respiratory care procedures to include patient assessment and monitoring, chest physiotherapy techniques and pulmonary rehabilitation. Hyperinflation therapy, airway management and introduction to mechanical ventilation. Equipment operation, quality assurance and maintenance. Use of communication skills during interactions with health care team members and patients. Ethical, legal and professional work behaviors. Prerequisites: Admission into the Respiratory Care program.

RES142 Lab 4 Credits 27 Periods
Respiratory Care Clinical I
Clinical application of concurrent respiratory care course work with emphasis on professionalism, medical record evaluation and performance of oxygen therapy, aerosol therapy, chest physiotherapy techniques, hyperinflation therapy, airway management devices and techniques, and observation of mechanical ventilation. Prerequisites: Admission into the Respiratory Care program.

RES144 Lecture 1 Credit 1 Period
Introduction to Mechanical Ventilation
Introduction to mechanical ventilation including, technology, impact of the use of technology on patient physiology, and how it affects the oxygenation and ventilation ability of the patient. Prerequisites: Admission into the Respiratory Care program.

RES220 Lec 5 Credits Lec 3 Periods / Lab 0 Credits Lab 6 Periods
Respiratory Care Fundamentals III
Advanced respiratory care therapy and assessment techniques to include ventilator setup and management. Diagnostic testing specific to assessment of oxygenation and ventilation and specific respiratory care procedures utilized in critical care. Prerequisites: Admission into the Respiratory Care program.

RES224 Lecture 2 Credits 2 Periods
Pathophysiology for Respiratory Care

RES226 Lab 4 Credits 27 Periods
Respiratory Care Clinical II
Clinical application of all prerequisite respiratory care course work with emphasis on adult critical care and neonatal/pediatric. Performance of general floor and critical care procedures. Advanced patient assessment and monitoring. Prerequisites: Admission into the Respiratory Care program.
**Course Listings 2019-2020**

**(REC) RECREATION**

**REC120** Lecture 3 Credits 3 Periods

**Leisure and the Quality of Life**
Overview of the historical, psychological, social, and cultural aspects of play, leisure, and recreation and their role in contemporary society. Nature of play and leisure behavior in human development within different cultures and the contribution play, recreation, and leisure make to the quality of life for individuals in today's society. Prerequisites: None.

**RELIGIOUS STUDIES**

**REL100** Lecture 3 Credits 3 Periods

**World Religions**
The development of various religions from the prehistoric to modern times. Political, economic, social and geographic relationships among world religions. Consideration of both Eastern and Western religions. Prerequisites: None.

**RESPIRATORY CARE**

**RES109** Lecture 0.5 Credits 0.5 Periods

**CPR for Health Care Provider**
Current American Heart Association standards for one and two rescuer cardiopulmonary resuscitation (CPR) and obstructed airway procedures on the adult, infant, and pediatric victim. Use of automatic, external defibrillation and resuscitation equipment. Prerequisites: None. Cross-References: HCC109.

**RES118** Lab 0.5 Credits 1.5 Periods

**Vascular Access in Respiratory Care Practice**
Scope of practice and regulations governing vascular access. Anatomy and physiology of the vascular system. Occupational Safety and Health Administration (OSHA) guidelines. Theory and practice of vascular access as designated by Infusion Nursing Standards (INS). Prerequisites: None. Corequisites: RES130 or permission of the Program Director.

**RES130** Lec 5 Credits Lec 3 Periods / Lab 0 Credits Lab 6 Periods

**Respiratory Care Fundamentals I**
Review of existing clinical data and recommendations. Data required to determine appropriateness of prescribed respiratory care plan. Administration of basic respiratory care therapeutics to include medical gas administration, oxygen therapy administration, and humidity/aerosol therapy administration. Use and maintenance of select respiratory equipment. Use of communication skills during interactions with members of the health care team and patients. Ethical, legal and professional work behaviors. Prerequisites: Admission into the Respiratory Care program.

**RES131** Lecture 1 Credit 1 Period

**Infection Control for Respiratory Care**
Techniques and procedures used by Respiratory Therapist to clean and sterilize equipment and environments, and prevent the transmission of nosocomial and other healthcare related infections. Prerequisites: Admission into the Respiratory Care program or admission into the Polysonomographic Technology program.

**RES133** Lecture 3 Credits 3 Periods

**Respiratory Care Clinical Seminar**
Clinical application of concurrent respiratory care course work with emphasis on professionalism, medical record evaluation, communication, universal precaution, infection control, patient safety, patient assessment, age-related care, cultural competence, routine hospital regulations, patient education and introduction to respiratory disease and treatment. Prerequisites: Admission into the Respiratory Care program.

**RES134** Lecture 2 Credits 2 Periods

**Respiratory Care Pharmacology I**
Pharmacologic principles related to the treatment of acute and chronic pulmonary disease. Information on bronchodilators, mucokinetics, surfactants, anti-inflammatory, antiasthmatic and anti-infective agents to include mechanism of action, general drug information, side effects, and respiratory care considerations. Prerequisites: Admission into the Respiratory Care program.

**RES136** Lecture 3 Credits 3 Periods

**Applied Biophysics for Respiratory Care**
Physical principles specific to ventilation. Laws of physics and their relationship to the respiratory system and the application of respiratory care equipment. Role of respiratory care during specific diagnostic procedures. Use of mathematical formulae. Prerequisites: Admission into the Respiratory Care program.

**RES140** Lec 5 Credits Lec 3 Periods / Lab 0 Credits Lab 6 Periods

**Respiratory Care Fundamentals II**
Continuation of basic respiratory care procedures to include patient assessment and monitoring, chest physiotherapy techniques and pulmonary rehabilitation. Hyperinflation therapy, airway management and introduction to mechanical ventilation. Equipment operation, quality assurance and maintenance. Use of communication skills during interactions with health care team members and patients. Ethical, legal and professional work behaviors. Prerequisites: Admission into the Respiratory Care program.

**RES142** Lab 4 Credits 27 Periods

**Respiratory Care Clinical I**
Clinical application of concurrent respiratory care course work with emphasis on professionalism, medical record evaluation and performance of oxygen therapy, aerosol therapy, chest physiotherapy techniques, hyperinflation therapy, airway management devices and techniques, and observation of mechanical ventilation. Prerequisites: Admission into the Respiratory Care program.

**RES144** Lecture 1 Credit 1 Period

**Introduction to Mechanical Ventilation**
Introduction to mechanical ventilation including, technology, impact of the use of technology on patient physiology, and how it affects the oxygenation and ventilation ability of the patient. Prerequisites: Admission into the Respiratory Care program.

**RES220** Lec 5 Credits Lec 3 Periods / Lab 0 Credits Lab 6 Periods

**Respiratory Care Fundamentals III**
Advanced respiratory care therapy and assessment techniques to include ventilator setup and management. Diagnostic testing specific to assessment of oxygenation and ventilation and specific respiratory care procedures utilized in critical care. Prerequisites: Admission into the Respiratory Care program.

**RES224** Lecture 2 Credits 2 Periods

**Pathophysiology for Respiratory Care**

**RES226** Lab 4 Credits 27 Periods

**Respiratory Care Clinical II**
Clinical application of all prerequisite respiratory care course work with emphasis on adult critical care and neonatal/pediatric. Performance of general floor and critical care procedures. Advanced patient assessment and monitoring. Prerequisites: Admission into the Respiratory Care program.
### Course Listings 2019-2020

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Periods</th>
<th>Description</th>
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<tbody>
<tr>
<td>RES230</td>
<td>4</td>
<td>3/0</td>
<td>Respiratory Care Fundamentals IV: Advanced respiratory care therapy and assessment techniques to include hemodynamic monitoring, performance and interpretation of pulmonary function testing. Assisting physicians during special procedures. Development of advanced respiratory care plans and clinical research techniques. Equipment operation, quality assurance, and maintenance. Use of effective communication skills with members of the health care team and patients. Prerequisites: Admission into the Respiratory Care program.</td>
</tr>
<tr>
<td>RES232</td>
<td>4</td>
<td>27</td>
<td>Respiratory Care Clinical III: Clinical application of all prerequisite respiratory care course work with emphasis on adult critical care and neonatal/pediatric care. Basic and critical care therapeutics, advanced patient assessment and monitoring. Assisting physician during special procedures. Increased responsibility for total patient care, work organization and time management. Prerequisites: Admission into the Respiratory Care program.</td>
</tr>
<tr>
<td>RES235</td>
<td>2</td>
<td>2</td>
<td>Respiratory Care Pharmacology II: Pharmacologic principles specific to the care of the respiratory patient in the acute care environment to include: cardiac and renal agents, blood pressure and antithrombotic agents, neuromuscular, anesthetic, sedative, analgesic agents. Prerequisites: Admission into the Respiratory Care program.</td>
</tr>
<tr>
<td>RES240</td>
<td>3</td>
<td>3</td>
<td>Respiratory Physiology: Physiology of the respiratory, cardiovascular and renal systems as related to oxygenation and ventilation of the human body. Physiologic mechanisms of breathing. Role of capillary circulation in fluid regulation. Impact of respiratory care procedures on the organ systems. Prerequisites: Admission into the Respiratory Care program.</td>
</tr>
<tr>
<td>RES270</td>
<td>2</td>
<td>2</td>
<td>Neonatal and Pediatric Respiratory Care: Neonatal and pediatric respiratory care to include development, anatomical and physiological differences, assessment, basic respiratory care procedures, mechanical ventilation and common disorders and conditions. Specific computer and communication skills. Prerequisites: Admission into the Respiratory Care program.</td>
</tr>
<tr>
<td>RES280</td>
<td>2</td>
<td>2</td>
<td>Respiratory Care Review: Data interpretation, equipment operation and therapeutic procedures specified for the National Board for Respiratory Care Entry Level Therapist examination. Quality control and therapeutic procedures. Pharmacologic agents and treatment of cardiopulmonary collapse. Pulmonary rehabilitation and home care. Prerequisites: Admission into the Respiratory Care program.</td>
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### Course Listings 2019-2020

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<tbody>
<tr>
<td>RES297</td>
<td>2</td>
<td>2</td>
<td>Respiratory Care Seminar: Presentation of case scenarios of various patient types and disease processes. Application of general principles of respiratory care to arrive at clinical solutions. Prerequisites: Admission into the Respiratory Care program.</td>
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</table>

### (SBU) SOCIETY AND BUSINESS

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<tbody>
<tr>
<td>SBU200</td>
<td>3</td>
<td>3</td>
<td>Society and Business: The study and scientific inquiry of issues and demands placed on business enterprise by owners, customers, government, employees and society. Included are social, ethical and public issues and analysis of the social impact of business responses. Prerequisites: None.</td>
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</tbody>
</table>

### (SGT) SURGICAL TECHNOLOGY

<table>
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<th>Course Code</th>
<th>Credits</th>
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<th>Description</th>
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<tbody>
<tr>
<td>SGT100</td>
<td>5</td>
<td>3/0</td>
<td>Fundamentals of Surgical Services: Preparation for the Certified Registered Central Service Technician (CRCST) role. Central Service work flow, job responsibilities, growth and development in the field, anatomy and physiology, microbiology for Central Service regulations and standards, infection prevention and control, tools for cleaning, decontamination, cleaning and decontamination, disinfection, sterile packaging and storage, processing, sterilization, management of patient care equipment, tracking systems, quality assurance, safety, communication, sterile processing for ambulatory surgery and clinics. Prerequisites: None. Corequisites: HCS/GST102 or permission of Program Director. Cross-References: HCS100.</td>
</tr>
<tr>
<td>SGT135</td>
<td></td>
<td>1/2</td>
<td>Instrument Handling I: Classification of surgical instruments for general surgery including basic laparoscopic, appendectomy, breast procedures, cholecystectomy, colon resection, gastrectomy, hemorrhoidectomy, hemiorthoraxy. Laparoscopic Nissen Fundoplication, liver resection, splenectomy, thyroidectomy, Whipple Procedure. Common and proper names for instruments in general surgery. Specific uses, handling, and care for surgical instruments in general surgery. Prerequisites: None. Corequisites: HCS/GST102 or permission of Program Director.</td>
</tr>
</tbody>
</table>
RES230 Lecture 4 Credits Lec 3 Periods / Lab 0 Credits Lab 3 Periods
Respiratory Care Fundamentals IV
Advanced respiratory care therapy and assessment techniques to include hemodynamic monitoring, performance and interpretation of pulmonary function testing. Assisting physicians during special procedures. Development of advanced respiratory care plans and clinical research techniques. Equipment operation, quality assurance, and maintenance. Use of effective communication skills with members of the health care team and patients. Prerequisites: Admission into the Respiratory Care program.

RES232 Lab 4 Credits 27 Periods
Respiratory Care Clinical III
Clinical application of all prerequisite respiratory care course work with emphasis on adult critical care and neonatal/pediatric care. Basic and critical care therapeutics, advanced patient assessment and monitoring. Assisting physician during special procedures. Increased responsibility for total patient care, work organization and time management. Prerequisites: Admission into the Respiratory Care program.

RES235 Lecture 2 Credits 2 Periods
Respiratory Care Pharmacology II
Pharmacologic principles specific to the care of the respiratory patient in the acute care environment to include: cardiac and renal agents, blood pressure and antithrombotic agents, neuromuscular, anesthetic, sedative, analgesic agents. Prerequisites: Admission into the Respiratory Care program.

RES240 Lecture 3 Credits 3 Periods
Respiratory Physiology
Physiology of the respiratory, cardiovascular and renal systems as related to oxygenation and ventilation of the human body. Physiologic mechanisms of breathing. Role of capillary circulation in fluid regulation. Impact of respiratory care procedures on the organ systems. Prerequisites: Admission into the Respiratory Care program.

RES270 Lecture 2 Credits 2 Periods
Neonatal and Pediatric Respiratory Care
 Neonatal and pediatric respiratory care to include development, anatomical and physiological differences, assessment, basic respiratory care procedures, mechanical ventilation and common disorders and conditions. Specific computer and communication skills. Prerequisites: Admission into the Respiratory Care program.

RES280 Lecture 2 Credits 2 Periods
Respiratory Care Review
Data interpretation, equipment operation and therapeutic procedures specified for the National Board for Respiratory Care Entry Level Therapist examination. Quality control and therapeutic procedures. Pharmacologic agents and treatment of cardiopulmonary collapse. Pulmonary rehabilitation and home care. Prerequisites: Admission into the Respiratory Care program.

RES291 Lecture 1 Credit 1 Period
Respiratory Care Advanced Life Support

RES292 Lecture 1 Credit 1 Period
Respiratory Care Pediatric Advanced Life Support

RES297 Lecture 2 Credits 2 Periods
Respiratory Care Seminar
Presentation of case scenarios of various patient types and disease processes. Application of general principles of respiratory care to arrive at clinical solutions. Prerequisites: Admission into the Respiratory Care program.

(SBU) SOCIETY AND BUSINESS
SBU200 Lecture 3 Credits 3 Periods
Society and Business
The study and scientific inquiry of issues and demands placed on business enterprise by owners, customers, government, employees and society. Included are social, ethical and public issues and analysis of the social impact of business responses. Prerequisites: None.

(SGT) SURGICAL TECHNOLOGY
SGT100 Lecture 5 Credits Lec 3 Periods / Lab 0 Credits Lab 6 Periods
Fundamentals of Surgical Services
Preparation for the Certified Registered Central Service Technician (CRCST) role. Central Service work flow, job responsibilities, growth and development in the field, anatomy and physiology, microbiology for Central Service regulations and standards, infection prevention and control, tools for cleaning, decontamination, cleaning and decontamination, disinfection, sterile packaging and storage, processing, sterilization, management of patient care equipment, tracking systems, quality assurance, safety, communication, sterile processing for ambulatory surgery and clinics. Prerequisites: None. Corequisites: HCS/SGT102 or permission of Program Director. Cross-References: HCS100.

SGT101 Lecture 1 Credit 1 Period
Medical Terminology for Surgical Services
Medical terminology for patient care in surgery related areas. Use of word parts, term spelling, pronunciation and abbreviations related to all surgical specialties. Prerequisites: None. Corequisites: HCS/SGT100. Cross-References: HCS101.

SGT102 Lecture 2 Credits Lec 1 Period / Lab 0 Credits Lab 3 Periods
Basic Surgical Instrumentation for Surgical Services

SGT135 Lecture + Lab 1 Credit 2 Periods
Instrument Handling I
Classification of surgical instruments for general surgery including basic laparoscopy, appendectomy, breast procedures, cholecystectomy, colon resection, gastrectomy, hemorrhoidectomy, hemiorrhaphy, laparoscopic Nissen Fundoplication, liver resection, splenectomy, thyroidectomy, Whipple Procedure. Common and proper names for instruments in general surgery. Specific uses, handling, and care for surgical instruments in general surgery. Prerequisites: None. Corequisites: HCS/SGT102 or permission of Program Director.
Advanced Surgical Instruments for Surgical Services
Surgical specialty instrumentation care and assembly of instruments to include plastic, gynecologic, urologic, basic bone and joint, head and neck, neurosurgery, cardiovascular and thoracic, microscopic, endoscopes, stapling guns, and robotics procedures. Prerequisites: A grade of C or better in HCS/SGT102. Cross-References: HCS152.

Instrument Handling II
Classification of specialized surgical instruments for surgical specialties including obstetric and gynecological procedures, genitourinary, otolaryngology, orthopedic, oral and maxillofacial, plastic and reconstructive, ophthalmic, cardiovascular, peripheral vascular, and neurosurgery. Common and proper names for instruments in the surgical specialties. Specific uses, handling, and care for surgical instruments in the surgical specialties. Prerequisites: A grade of C or better in SGT135.

Hospital Central Service Practicum for Surgical Technology
Short-term supervised study and application for 40 hours of Central Service theory and laboratory skills. Exposure to limited compilation of case carts, building of instrument trays, distribution of supplies, sterilization and inventory. Prerequisites: A grade of C or better in HCS/SGT102 or permission of Instructor. Corequisites: HCS/SGT152 or permission of Instructor.

Pharmacology for Surgical Technology I
Role of surgical technologist in safe handling of drugs according to operating room policies and procedures. Uses and classification of drugs. Federal and state pharmacy regulations applicable to the surgical patient. Complications and safety issues during topical, local anesthesia, antibiotic, diagnostic agent, and hemostatic agent administration. Prerequisites: A grade of C or better in SGT135.

Pharmacology for Surgical Technology II
Classification of drugs. Federal and state pharmacy regulations applicable to the surgical patient. Complications and safety issues during regional and general anesthesia administration, and surgical specialties of obstetrics, peripheral vascular, otorhinolaryngology, oral and maxillofacial, plastic and reconstructive, ophthalmic, cardiothoracic, peripheral vascular, and neurosurgery. Common and proper names for instruments in the surgical specialties. Specific uses, handling, and care for surgical instruments in the surgical specialties. Prerequisites: A grade of C or better in SGT135.

Advanced Surgical Instruments for Surgical Services
Surgical specialty instrumentation care and assembly of instruments to include plastic, gynecologic, urologic, basic bone and joint, head and neck, neurosurgery, cardiovascular and thoracic, microscopic, endoscopes, stapling guns, and robotics procedures. Prerequisites: A grade of C or better in HCS/SGT102. Cross-References: HCS152.

Instrument Handling II
Classification of specialized surgical instruments for surgical specialties including obstetric and gynecological procedures, genitourinary, otolaryngology, orthopedic, oral and maxillofacial, plastic and reconstructive, ophthalmic, cardiothoracic, peripheral vascular, and neurosurgery. Common and proper names for instruments in the surgical specialties. Specific uses, handling, and care for surgical instruments in the surgical specialties. Prerequisites: A grade of C or better in SGT135.

Hospital Central Service Practicum for Surgical Technology
Short-term supervised study and application for 40 hours of Central Service theory and laboratory skills. Exposure to limited compilation of case carts, building of instrument trays, distribution of supplies, sterilization and inventory. Prerequisites: A grade of C or better in HCS/SGT102 or permission of Instructor. Corequisites: HCS/SGT152 or permission of Instructor.

Pharmacology for Surgical Technology I
Role of surgical technologist in safe handling of drugs according to operating room policies and procedures. Uses and classification of drugs. Federal and state pharmacy regulations applicable to the surgical patient. Complications and safety issues during topical, local anesthesia, antibiotic, diagnostic agent, and hemostatic agent administration. Prerequisites: A grade of C or better in SGT135.

Pharmacology for Surgical Technology II
Classification of drugs. Federal and state pharmacy regulations applicable to the surgical patient. Complications and safety issues during regional and general anesthesia administration, and surgical specialties of obstetrics, peripheral vascular, otorhinolaryngology, oral and maxillofacial, plastic and reconstructive, ophthalmic, cardiothoracic, peripheral vascular, and neurosurgery. Common and proper names for instruments in the surgical specialties. Specific uses, handling, and care for surgical instruments in the surgical specialties. Prerequisites: A grade of C or better in SGT135.

Operating Room Practicum I
General surgical procedures to include ophthalmic, plastic surgery, reconstruction with grafting, obstetric, gynecological, genitourinary, otolaryngology, oral and maxilla facial surgery with lasers and scopes. Surgical techniques as applied to major body systems, anatomical structures. Related abbreviations and usage in the pre-operative, intra-operative and post-operative areas of surgical technology. Surgical care provided by the surgical technologist in the perioperative arena. Prerequisites: A grade of C or better in SGT165.

Operating Room Practicum II
General surgical procedures to include ophthalmic, plastic surgery, reconstruction with grafting, obstetric, gynecological, genitourinary, otolaryngology, oral and maxilla facial surgery with lasers and scopes. Surgical techniques as applied to major body systems, anatomical structures. Related abbreviations and usage in the pre-operative, intra-operative and post-operative areas of surgical technology. Surgical care provided by the surgical technologist in the perioperative arena. Prerequisites: A grade of C or better in SGT165.

Operating Room Practicum III
Intermediate level reinforcement and broadening of knowledge and skills of the surgical technologist required for pre-operative, intra-operative and post-operative care of the patient undergoing general surgery and specialties. Prerequisites: A grade of C or better in SGT205.

Operating Room Practicum IV
Advanced level reinforcement and broadening of knowledge and skills of the surgical technologist required for pre-operative, intra-operative and post-operative care of the patient undergoing general surgery and specialties. Prerequisites: A grade of C or better in SGT220.

Operating Room Practicum V
Continued advanced level reinforcement and broadening of knowledge and skills of the surgical technologist required for pre-operative, intra-operative and post-operative care of the patient undergoing general surgery and specialties. Prerequisites: A grade of C or better in SGT225.

Surgical Procedures I
Roles and responsibilities of operating room personnel focusing on the surgical technician under the direction of the clinical facility preceptor demonstrating the role of the surgical technologist and scope of practice and standard of recommendations. Prerequisites: A grade of C or better in SGT165.

Surgical Procedures II
General surgical procedures to include ophthalmic, plastic surgery, reconstruction with grafting, obstetric, gynecological, genitourinary, otolaryngology, oral and maxilla facial surgery with lasers and scopes. Surgical techniques as applied to major body systems, anatomical structures. Related abbreviations and usage in the pre-operative, intra-operative and post-operative areas of surgical technology. Surgical care provided by the surgical technologist in the perioperative arena. Prerequisites: A grade of C or better in SGT165.

Surgical Procedures III
Specialized surgical procedures of orthopedic, peripheral vascular, cardiovascular, thoracic and neurosurgery to include applications with lasers and scopes. Surgical techniques as applied to major body systems, anatomical structures. Related abbreviations and usage in the pre-operative, intra-operative and post-operative surgical arenas. Care provided by the surgical technologist in each phase of surgery. Prerequisites: A grade of C or better in SGT210.

Certification Examinations Preparation
Preparation for the National Surgical Technology Certification Examination. Review of the content specifications, techniques for preparation and review of current literature determined by the Liaison Council on Certification for Surgical Technologists. Exploration of career possibilities. Prerequisites: A grade of C or better in SGT210 and SGT215.
Course Listings 2019-2020

SGT152  Lec 2 Credits  Lec 1 Period / Lab 0 Credits  Lab 3 Periods
Advanced Surgical Instruments for Surgical Services
Surgical specialty instrumentation care and assembly of instruments to include plastic, gynecologic, urologic, basic bone and joint, head and neck, neurosurgery, cardiovascular and thoracic, microscopic, endoscopes, stapling guns, and robotics procedures. Prerequisites: A grade of C or better in HCS/SGT102. Cross-References: HCS152.

SGT155  Lec + Lab 1 Credit  2 Periods
Instrument Handling II
Classification of specialized surgical instruments for surgical specialties including obstetric and gynecological procedures, genitourinary, otorhinolaryngology, orthopedic, oral and maxillofacial, plastic and reconstructive, ophthalmic, cardiothoracic, peripheral vascular, and neurosurgery. Common and proper names for instruments in the surgical specialties. Specific uses, handling, and care for surgical instruments in the surgical specialties. Prerequisites: A grade of C or better in SGT135.

SGT156  Lab 1 Credit  3 Periods
Hospital Central Service Practicum for Surgical Technology
Short-term supervised student observation and application for 40 hours of Central Service theory and laboratory skills. Exposure to limited compilation of case carts, building of instrument trays, distribution of supplies, sterilization and inventory. Prerequisites: A grade of C or better in HCS/SGT102 or permission of Instructor. Corequisites: HCS/SGT152 or permission of Instructor.

SGT165  Lec 4 Credits  Lec 2 Periods / Lab 0 Credits  Lab 6 Periods
Surgical Procedures I
General surgery arena procedures. Pre-operative procedures to include patients' charts and consent forms. Common diagnostic procedures prior to surgery. Operating room admission procedures and interview, charting, and checklist. Purpose of the post anesthesia care unit (PACU). Impact of specific chronic illnesses on body functions. Issues pertaining to death and dying. Special considerations for the pediatric and geriatric patient. Prerequisites: A grade of C or better in SGT135.

SGT180  Lec + Lab 1 Credit  3 Periods
Pharmacology for Surgical Technology I
Role of surgical technologist in safe handling of drugs according to operating room policies and procedures. Uses and classification of drugs. Federal and state pharmacy regulations applicable to the surgical patient. Complications and safety issues during topical, local anesthesia, antibiotic, diagnostic agent and hemostatic agent administration. Prerequisites: A grade of C or better in SGT135.

SGT200  Lab 1 Credit  6 Periods
Operating Room Practicum I
Roles and responsibilities of operating room personnel focusing on the surgical technician under the direction of the clinical facility preceptor demonstrating the role of the surgical technologist and scope of practice and standard of recommendations. Prerequisites: A grade of C or better in SGT165.

SGT205  Lab 2 Credits  12 Periods
Operating Room Practicum II
Reinforcement and broadening of knowledge and skills of the surgical technologist required for pre-operative, intra-operative and post-operative care of the patient undergoing general surgery and specialties. Prerequisites: A grade of C or better in SGT200.

SGT210  Lec 4 Credits  Lec 2 Periods / Lab 0 Credits  Lab 6 Periods
Surgical Procedures II
General surgical procedures to include ophthalmic, plastic surgery, reconstruction with grafting, obstetric, gynecological, genitourinary, otorhinolaryngology, oral and maxilla facial surgery with lasers and scopes. Surgical techniques as applied to major body systems, anatomical structures. Related abbreviations and usage in the pre-operative, intra-operative and post-operative areas of surgical technology. Surgical care provided by the surgical technologist in the perioperative arena. Prerequisites: A grade of C or better in SGT165.

SGT215  Lec + Lab 1 Credit  3 Periods
Pharmacology for Surgical Technology II
Role of surgical technologist in safe handling of drugs according to operating room policies and procedures. Uses and classification of drugs. Federal and state pharmacy regulations applicable to the surgical patient. Complications and safety issues during regional and general anesthesia administration, and surgical specialties of obstetrics, peripheral vascular, orthopedics and oncology. Prerequisites: A grade of C or better in SGT180.

SGT220  Lab 3 Credits  15 Periods
Operating Room Practicum III
Intermediate level reinforcement and broadening of knowledge and skills of the surgical technologist required for pre-operative, intra-operative and post-operative care of the patient undergoing general surgery and specialties. Prerequisites: A grade of C or better in SGT205.

SGT225  Lab 3 Credits  15 Periods
Operating Room Practicum IV
Advanced level reinforcement and broadening of knowledge and skills of the surgical technologist required for pre-operative, intra-operative and post-operative care of the patient undergoing general surgery and specialties. Prerequisites: A grade of C or better in SGT220.

SGT227  Lab 3 Credits  15 Periods
Operating Room Practicum V
Continued advanced level reinforcement and broadening of knowledge and skills of the surgical technologist required for pre-operative, intra-operative and post-operative care of the patient undergoing general surgery and specialties. Prerequisites: A grade of C or better in SGT225.

SGT260  Lab 2 Credits  1 Period
Surgical Procedures III
Specialized surgical procedures of orthopedic, peripheral vascular, cardiovascular, thoracic and neurosurgery to include applications with lasers and scopes. Surgical techniques as applied to major body systems, anatomical structures. Related abbreviations and usage in the pre-operative, intra-operative and post-operative surgical arenas. Care provided by the surgical technologist in each phase of surgery. Prerequisites: A grade of C or better in SGT210.

SGT275  Lec + Lab 2 Credits  3 Periods
Certification Examinations Preparation
Preparation for the National Surgical Technology Certification Examination. Review of the content specifications, techniques for preparation and review of current literature determined by the Liaison Council on Certification for Surgical Technologists. Exploration of career possibilities. Prerequisites: A grade of C or better in SGT210 and SGT215.


(SOC) SOCIOMETRY

SOC101 Lecture 3 Credits 3 Periods
Introduction to Sociology SUN# SOC1101
The systematic study of social behavior and human groups, particularly the influence of culture, socialization, social structure, stratification, social institutions, differentiation by region, race, ethnicity, sex/gender, age, class, and socio-cultural change upon people's attitudes and behaviors. Prerequisites: None.

SOC241 Lecture 3 Credit 3 Periods
Race and Ethnic Relations SUN# SOC2215
Examines how the social construction of race shapes social interaction and social institutions. Explores the consequences of power, privilege and oppression among major ethnic and racial groups in the United States. Prerequisites: None.

SOC282AA Lab 1 Credit 1 Period
Service-Learning Experience in Sociology
Unpaid Service-Learning (SL) experience, completed with approved community partner. SOC282AA may be repeated for a total of six (6) credit hours. Standard grading available according to procedures outlined in catalog. Prerequisites: A grade of C or better in SOC101 and permission of Instructor.

(SPA) SPANISH

SPA101 Lecture 4 Credits 4 Periods
Elementary Spanish I SUN# SPA1101
Basic grammar, pronunciation and vocabulary of the Spanish language. Includes the study of the Spanish-speaking cultures. Practice of listening, speaking, reading, and writing skills. Prerequisites: None.

SPA102 Lecture 4 Credits 4 Periods
Elementary Spanish II SUN# SPA1102
Continued study of grammar and vocabulary of the Spanish language and study of the Spanish-speaking cultures. Emphasis on speaking, reading, and writing skills. Prerequisites: (A grade of C or better in SPA101 or SPA101AA), or permission of Department or Division. Completion of prerequisites within the last three years is required.

(STO) STORYTELLING

STO292 Lecture 3 Credits 3 Periods
The Art of Storytelling
Explore the art and origin of storytelling. Provide a variety of storytelling techniques, styles and exercises to enhance the delivery of telling stories. Assist in the integration and application of storytelling to the learning environment in the classroom. Requisites: None. Cross-References: EDU292 HUM292.

(SWU) SOCIAL WORK

SWU171 Lecture 3 Credits 3 Periods
Introduction to Social Welfare
Analysis of contemporary social welfare services and professional social work. Prerequisites: (A grade of C or better in RDG091 or eligibility for CRE101 as indicated by appropriate reading placement test score) and (a grade of C or better in ENG091 or eligibility for ENG101 as indicated by appropriate writing placement test score).

SWU291 Lecture 3 Credits 3 Periods
Social Service Delivery Systems
Purposes, structures, and delivery systems of human service agencies. Includes 40 hours of volunteer experience in local human service agencies. Prerequisites: A grade of C or better in SWU171, or permission of Department or Division or Corequisites: SWU171.

SWU295 Lecture 3 Credits 3 Periods
Effective Helping in a Diverse World
Introduction to professional helper communication skills with respect to cross-cultural practice and diversity issues, in a social work setting. Prerequisites: None. SWU171 suggested but not required.

(TQM) TOTAL QUALITY MANAGEMENT

TQM101 Lecture 3 Credits 3 Periods
Quality Customer Service
Examines the nature of quality customer service and the attitudes, knowledge, and skills needed to work effectively in a quality customer service environment. Foundation skills for quality customer service are taught, applied and practiced. Prerequisites: None. Cross-References: CSM101.

TQM240 Lecture 3 Credits 3 Periods
Project Management in Quality Organizations
Presents methods for quality organizations in how to plan and schedule a project in use of Critical Path Method (CPM) and Program Evaluation and Review Technique (PERT) techniques and software to monitor and control projects. Prerequisites: None.

(WED) WELLNESS EDUCATION

WED110 Lecture 3 Credits 3 Periods
Principles of Physical Fitness and Wellness
Stress basic, lifetime health and skill-related components of fitness to achieve total wellness. Topics include nutrition, weight control, exercise and aging, cardiovascular and cancer risk reduction, stress management, prevention of sexually transmitted diseases, substance abuse control, and overall management of personal health and lifestyle habits to achieve the highest potential for well-being. Prerequisites: None.

WED162 Lecture 1 Credit 1 Period
Meditation and Wellness
Physiology of meditation and its effects on physical and mental health; scholastic abilities and interpersonal relationships; differentiation between meditation and other relaxation techniques. Prerequisites: None.

(WLD) WELDING TECHNOLOGY

WLD201 Lec + Lab 3 Credits 6 Periods
Welding II
Further study of electric arc and oxyacetylene welding with emphasis on GTAW (heliarc) and GMAW ( mig) processes to weld both ferrous and nonferrous metal. Prerequisites: A grade of C or better in WLD101.
(SOC) SOCIOLOGY

SOC101 Lecture 3 Credits 3 Periods
Introduction to Sociology SUN# SOC1101
The systematic study of social behavior and human groups, particularly the influence of culture, socialization, social structure, stratification, social institutions, differentiation by region, race, ethnicity, sex/gender, age, class, and socio-cultural change upon people's attitudes and behaviors. Prerequisites: None.

SOC241 Lecture 3 Credit 3 Periods
Race and Ethnic Relations SUN# SOC2215
Examines how the social construction of race shapes social interaction and social institutions. Explores the consequences of power, privilege and oppression among major ethnic and racial groups in the United States. Prerequisites: None.

SOC282AA Lab 1 Credit 1 Period
Service-Learning Experience in Sociology
Unpaid Service-Learning (SL) experience, completed with approved community partner. SOC282AA may be repeated for a total of six (6) credit hours. Standard grading available according to procedures outlined in catalog. Prerequisites: A grade of C or better in SOC101 and permission of Instructor.

(SPA) SPANISH

SPA101 Lecture 4 Credits 4 Periods
Elementary Spanish I SUN# SPA1101
Basic grammar, pronunciation and vocabulary of the Spanish language. Includes the study of the Spanish-speaking cultures. Practice of listening, speaking, reading, and writing skills. Prerequisites: None.

SPA102 Lecture 4 Credits 4 Periods
Elementary Spanish II SUN# SPA1102
Continued study of grammar and vocabulary of the Spanish language and study of the Spanish-speaking cultures. Emphasis on speaking, reading, and writing skills. Prerequisites: (A grade of C or better in SPA101) or SPA101AA, or permission of Department or Division. Completion of prerequisites within the last three years is required.

(STO) STORYTELLING

STO292 Lecture 3 Credits 3 Periods
The Art of Storytelling
Explore the art and origin of storytelling. Provide a variety of storytelling techniques, styles and exercises to enhance the delivery of telling stories. Assist in the integration and application of storytelling to the learning environment in the classroom. Prerequisites: None. Cross-References: EDU292 HUM292.

(SWU) SOCIAL WORK

SWU171 Lecture 3 Credits 3 Periods
Introduction to Social Welfare
Analysis of contemporary social welfare services and professional social work. Prerequisites: (A grade of C or better in RDG091 or eligibility for CRE101 as indicated by appropriate reading placement test score) and (a grade of C or better in ENG091 or eligibility for ENG101 as indicated by appropriate writing placement test score).

(WED) WELLNESS EDUCATION

WED110 Lecture 3 Credits 3 Periods
Principles of Physical Fitness and Wellness
Stress basic, lifetime health and skill-related components of fitness to achieve total wellness. Topics include nutrition, weight control, exercise and aging, cardiovascular and cancer risk reduction, stress management, prevention of sexually transmitted diseases, substance abuse control, and overall management of personal health and lifestyle habits to achieve the highest potential for well-being. Prerequisites: None.

WED162 Lecture 1 Credit 1 Period
Meditation and Wellness
Physiology of meditation and its effects on physical and mental health; scholastic abilities and interpersonal relationships; differentiation between meditation and other relaxation techniques. Prerequisites: None.

(WLD) WELDING TECHNOLOGY

WLD201 Lec + Lab 3 Credits 6 Periods
Welding II
Further study of electric arc and oxyacetylene welding with emphasis on GTAW (heliarc) and GMAW (mig) processes to weld both ferrous and nonferrous metal. Prerequisites: A grade of C or better in WLD101.
(WRT) WATER RESOURCE TECHNOLOGY

WRT100  Lecture 3 Credits 3 Periods
Introduction to Water Resources
Fundamental principles of water resources. Basic concepts and strategies in the study of water, the current focus on water pollution and water purification. Topics include ground water, surface water, water quality, water purification, and water pollution. Presentation of ongoing studies related to work of earth scientists. Prerequisites: Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher-level mathematics course.

WRT101  Lec + Lab 4 Credits 6 Periods
Introduction to Water Resources Field Experiences
Fundamental principles of water resources. Basic concepts and strategies in the study of water, the current focus on water pollution and water purification. Topics include ground water, surface water, water quality, water purification, and water pollution. Presentation of ongoing studies related to work of earth scientists. Hands-on experiences in the field. Prerequisites: Permission of Department or Division.

WRT102  Lecture 3 Credits 3 Periods
Water Resources Computations and Data Analysis
Fundamentals of water resources technology formulas for real-world problems. Discussion of best practices in water resources given the results of the calculations. Prerequisites: Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher-level mathematics course.

WRT103  Lecture 3 Credits 3 Periods
Industrial Pretreatment
Principles of industrial pretreatment programs. Overview of industrial facilities inspections and pollution prevention strategies. Sampling techniques of industrial waste waters. Field exercises to acquire industrial wastewater quality data and industrial discharge flow measurements. Quality assurance/quality control (QA/QC), and data processing techniques included. Safety procedures stressed. Prerequisites: A grade of C or better in WRT100 or permission of Department or Division.

WRT106  Lecture 3 Credits 3 Periods
Small Water System Operation and Maintenance
Overview of safe and effective operation and maintenance of small drinking water systems and treatment plants. Also covers wells, pumps, disinfection and setting water rates. Prerequisites: A grade of C or better in WRT110, or permission of Department or Division.

WRT110  Lecture 3 Credits 3 Periods
Principles of Water Treatment Plant Operations
Principles in the safe and effective operation and maintenance of drinking water treatment plants, reservoir management and intake structuring. The source of water, basic water laboratory test procedures and calculations also covered. Prerequisites: A grade of C or better in WRT100 and WRT115, or permission of Department or Division.

WRT114  Lecture 3 Credits 3 Periods
Mineral Control
Operation and maintenance processes in the treatment for iron, manganese, hardness, trihalomethanes and minerals. The importance of fluoridating drinking water and water softening. Prerequisites: A grade of C or better in WRT110, or permission of Department or Division.

WRT115  Lecture 3 Credits 3 Periods
Water Technology Calculations
Application of water technology formulas for operation and maintenance of water/wastewater plants and distribution and collection systems. Includes operator examination preparation and discussion of best practices in water technologies given the results of the calculations. Prerequisites: A grade of C or better in WRT110 or permission of Department or Division.

WRT116  Lecture 3 Credits 3 Periods
Water Treatment Plant Administration
Administration and maintenance of a water treatment plant. Handling and disposal of process wastes, instrumentation use, laboratory procedures, drinking water regulations. Prerequisites: A grade of C or better in WRT110 or permission of Department or Division.

WRT117  Lecture 3 Credits 3 Periods
Geographic Information Systems (GIS)
Purpose and applications of desktop Geographic Information Systems (GIS) technology applied to water resources and planning. ArcView software program applications and data management. Includes data query and spatial data functions. Analysis of spatial relationships and presentation of spatial information. Prerequisites: A grade of C or better in BPC110, or CIS105, or permission of Department or Division.

WRT120  Lec + Lab 4 Credits 6 Periods
Hydrologic Instrumentation
Overview of operating hydrologic data gathering equipment used in surface water, groundwater and water quality sampling networks. Continuous monitoring records, electronics, data collection problems, and methods of installation of instruments. Safety stressed. Prerequisites: A grade of C or better in WRT100, or WRT101, or permission of Department or Division.

WRT121  Lecture 3 Credits 3 Periods
Operation of Wastewater Treatment Plants
Safe and effective operation and maintenance of wastewater treatment plants. Overview of treatment processes and laboratory testing used in wastewater treatment plants. Principles and processes involved in waste treatment ponds, disinfection and chlorination process. Prerequisites: A grade of C or better in WRT100 or permission of Department or Division.

WRT122  Lecture 3 Credits 3 Periods
Basic Wastewater Treatment Processes
Exploration of the processes used in the preliminary treatment of wastewater. Operation of equipment used in wastewater treatment, principles of sedimentation and flotation, trickling filters, biological contactors, and activated sludge also included. Prerequisites: A grade of C or better in WRT121.

WRT124  Lecture 3 Credits 3 Periods
Sludge and Solids Handling
Exploration of conventional activated sludge plant operations including principles of activated sludge and sludge digestors used in wastewater treatment. Laboratory procedures and effluent disposal included. Prerequisites: A grade of C or better in WRT121, or permission of Department or Division.

WRT125  Lecture 2 Credits 2 Periods
Surveying for Water Resources
Fundamental surveying principles utilized in water field studies. Level and transit, horizontal measurement by tape or stadia. Benchmark and profile leveling traverse surveys and computations and establishment of line and grade. Prerequisites: A grade of C or better in WRT100 or permission of Department or Division.
(WRT) WATER RESOURCE TECHNOLOGY

WRT100 Lecture 3 Credits 3 Periods
Introduction to Water Resources
Fundamental principles of water resources. Basic concepts and strategies in the study of water, the current focus on water pollution and water purification. Topics include ground water, surface water, water quality, water purification, and water pollution. Presentation of ongoing studies related to work of earth scientists. Prerequisites: Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher-level mathematics course.

WRT101 Lec + Lab 4 Credits 6 Periods
Introduction to Water Resources Field Experiences
Fundamental principles of water resources. Basic concepts and strategies in the study of water, the current focus on water pollution and water purification. Topics include ground water, surface water, water quality, water purification, and water pollution. Presentation of ongoing studies related to work of earth scientists. Hands-on experiences in the field. Prerequisites: Permission of Department or Division.

WRT102 Lecture 3 Credits 3 Periods
Water Resources Computations and Data Analysis
Fundamentals of water resources technology formulas for real-world problems. Discussion of best practices in water resources given the results of the calculations. Prerequisites: Math assessment score on District placement exam placing students into MAT090 or MAT091 or MAT092 or higher-level mathematics course.

WRT103 Lecture 3 Credits 3 Periods
Industrial Pretreatment
Principles of industrial pretreatment programs. Overview of industrial facilities inspections and pollution prevention strategies. Sampling techniques of industrial waste waters. Field exercises to acquire industrial wastewater quality data and industrial discharge flow measurements. Quality assurance/quality control (QA/QC), and data processing techniques included. Safety procedures stressed. Prerequisites: A grade of C or better in WRT100 or permission of Department or Division.

WRT106 Lecture 3 Credits 3 Periods
Small Water System Operation and Maintenance
Overview of safe and effective operation and maintenance of small drinking water systems and treatment plants. Also covers wells, pumps, disinfection and setting water rates. Prerequisites: A grade of C or better in WRT110, or permission of Department or Division.

WRT110 Lecture 3 Credits 3 Periods
Principles of Water Treatment Plant Operations
Principles in the safe and effective operation and maintenance of drinking water treatment plants, reservoir management and intake structuring. The source of water, basic water laboratory test procedures and calculations also covered. Prerequisites: A grade of C or better in WRT100 and WRT115, or permission of Department or Division.

WRT114 Lecture 3 Credits 3 Periods
Mineral Control
Operation and maintenance processes in the treatment for iron, manganese, hardness, trihalomethanes and minerals. The importance of fluoridating drinking water and water softening. Prerequisites: A grade of C or better in WRT110, or permission of Department or Division.

WRT115 Lecture 3 Credits 3 Periods
Water Technology Calculations
Application of water technology formulas for operation and maintenance of water/wastewater plants and distribution and collection systems. Includes operator examination preparation and discussion of best practices in water technologies given the results of the calculations. Prerequisites: A grade of C or better in WRT100 or permission of Department or Division.

WRT116 Lecture 3 Credits 3 Periods
Water Treatment Plant Administration
Administration safety and maintenance of a water treatment plant. Handling and disposal of process wastes, instrumentation use, laboratory procedures, drinking water regulations. Prerequisites: A grade of C or better in WRT110 or permission of Department or Division.

WRT117 Lecture 3 Credits 3 Periods
Geographic Information Systems (GIS)
Purpose and applications of desktop Geographic Information Systems (GIS) technology applied to water resources and planning. ArcView software program applications and data management. Includes data query and spatial data functions. Analysis of spatial relationships and presentation of spatial information. Prerequisites: A grade of C or better in BPC110, or CIS105, or permission of Department or Division.

WRT120 Lec + Lab 4 Credits 6 Periods
Hydrologic Instrumentation
Overview of operating hydrologic data gathering equipment used in surface water, groundwater and water quality sampling networks. Continuous monitoring records, electronics, data collection problems, and methods of installation of instruments. Safety stressed. Prerequisites: A grade of C or better in WRT100, or WRT101, or permission of Department or Division.

WRT121 Lecture 3 Credits 3 Periods
Operation of Wastewater Treatment Plants
Safe and effective operation and maintenance of wastewater treatment plants. Overview of treatment processes and laboratory testing used in wastewater treatment plants. Principles and processes involved in waste treatment ponds, disinfection and chlorination process. Prerequisites: A grade of C or better in WRT100 or permission of Department or Division.

WRT122 Lecture 3 Credits 3 Periods
Basic Wastewater Treatment Processes
Exploration of the processes used in the preliminary treatment of wastewater. Operation of equipment used in wastewater treatment, principles of sedimentation and flotation, trickling filters, biological contactors, and activated sludge also included. Prerequisites: A grade of C or better in WRT121.

WRT124 Lecture 3 Credits 3 Periods
Sludge and Solids Handling
Exploration of conventional activated sludge plant operations including principles of activated sludge and sludge digestors used in wastewater treatment. Laboratory procedures and effluent disposal included. Prerequisites: A grade of C or better in WRT121, or permission of Department or Division.

WRT125 Lecture 2 Credits 2 Periods
Surveying for Water Resources
Fundamental surveying principles utilized in water field studies. Level and transit, horizontal measurement by tape or stadia. Benchmark and profile leveling traverse surveys and computations and establishment of line and grade. Prerequisites: A grade of C or better in WRT100 or permission of Department or Division.
WRT126 Lecture 3 Credits 3 Periods
Wastewater Plant Administration
Administrative responsibilities in operating a wastewater plant including safety and maintenance. Emphasis on laboratory procedures, reporting data in reports and graphs and recordkeeping. Prerequisites: A grade of C or better in WRT121 or permission of Department or Division.

WRT130 Lecture 3 Credits 3 Periods
Groundwater Hydrology
Fundamentals of groundwater resources. Includes basic flow equations, well hydraulics, groundwater fluctuations, artificial recharge and basic data collection techniques. Emphasis on the use of data in analysis of local and regional flow systems. Prerequisites: A grade of C or better in WRT100 or permission of Department or Division.

WRT130LL Lab 1 Credit 3 Periods
Groundwater Field Techniques
Field exercises to acquire groundwater data and service data-gathering equipment. Safety procedures stressed. Prerequisites or Corequisites: WRT130 or permission of Department or Division.

WRT131 Lecture 3 Credits 3 Periods
Wastewater Collection Systems Operation and Maintenance
Overview of wastewater collection systems with an emphasis on inspection and cleaning of sewer systems. Safety considerations, maintenance and underground repair procedures also covered. Prerequisites: A grade of C or better in WRT100 and WRT115, or permission of Department or Division.

WRT132 Lecture 3 Credits 3 Periods
Wastewater Collection Systems Administration
Overview of administrative duties of operating a wastewater collection system. Principles of lift stations, equipment maintenance, and sewer rehabilitation also covered. Prerequisites: A grade of C or better in WRT131.

WRT134 Lecture 3 Credits 3 Periods
Water Distribution System Operation and Maintenance
Safe and effective operation and maintenance of water distribution systems. Water contaminants, disinfection and chlorination in addition to development of a plant safety plan. Prerequisites: A grade of C or better in WRT100 and WRT115, or permission of Department or Division.

WRT140 Lecture 3 Credits 3 Periods
Water Quality for Treatment Industry
Introduction to water quality including common parameters in the treatment industry, regulations, and types and methods of monitoring. Prerequisites: A grade of C or better in WRT100 or Corequisites: WRT100 or permission of Department or Division.

WRT140LL Lab 1 Credit 3 Periods
Water Quality for Treatment Industry Laboratory
Laboratory safety, sampling and reporting; wet analytical methods; sample analyses; process chemistry. Prerequisites or Corequisites: WRT140 or permission of Department or Division.

WRT150 Lecture 3 Credits 3 Periods
Introduction to Surface Water Data Collection
Fundamentals of surface water data collection while stressing safe practices. Map reading and navigation, field inspections, accessing, collecting, recording and retrieving surface water data. Prerequisites or Corequisites: WRT100 or permission of Department or Division.

WRT150LL Lec + Lab 2 Credits 3 Periods
Introduction to Surface Water Data Collection Field Techniques
Hands-on experience in surface water data collection while stressing safe practices. Map reading and navigation, field inspections, accessing, collecting, and recording surface water data. Prerequisites or Corequisites: WRT150, or permission of Department or Division.

WRT152 Lecture 3 Credits 6 Periods
Water Resources Field Investigations I: Groundwater and Surface Water
Hands-on experience and field exercises to acquire surface water and groundwater data and service data-gathering equipment. Hands-on experience in surface water data collection while stressing safe practices. Map reading and navigation, field inspections, accessing, collecting, and recording surface water and groundwater data. Safety procedures stressed. Prerequisites or Corequisites: WRT130 and WRT150, or permission of Department or Division.

WRT190AA Lecture 1 Credit 1 Period
Water Resources Technologies Seminar
Interaction with other students and professionals in the water resources technologies industry. Stress placed on sharing knowledge and demonstrating understanding through discussion of current issues in the industry, operational tasks, and emerging issues. Prerequisites: None.

WRT204 Lecture 3 Credits 3 Periods
Water/Wastewater Maintenance/Mechanical Systems
Maintenance of facilities and equipment in both water and wastewater systems. Prerequisites: A grade of C or better in WRT110, or WRT121, or Corequisites: WRT110, or WRT121, or permission of Department or Division.

WRT205 Lecture 3 Credits 3 Periods
Power and Instrumentation
Principles of basic electricity, electrical circuits, motors, transformers, and process control instrumentation. Prerequisites: A grade of C or better in WRT110, or WRT121, or WRT131, or WRT134.

WRT210 Lecture 3 Credits 3 Periods
Membrane Technologies
Fundamentals of reverse osmosis. Basic theory and function of membrane technologies, membrane design and use, element configuration, maintenance, and record keeping. Prerequisites: A grade of C or better in [(WRT110 or WRT121) and (WRT140 and WRT140LL)] or permission of Department or Division.

WRT221 Lecture 3 Credits 3 Periods
Water and Wastewater Treatment Plants Administration
Administration safety and maintenance of water and wastewater treatment plants. Handling and disposal of process wastes and instrumentation use. Emphasis on reporting data in reports, graphs, and record keeping. Prerequisites or Corequisites: WRT110 or WRT121.

WRT240 Lecture 3 Credits 3 Periods
Water Quality
Fundamental chemical and physical factors involved in evaluating water quality. Water quality deterioration from landfills, underground storage tanks, and hazardous waste. Sampling techniques of groundwater, soil, and surface water. Quality assurance, quality control, and data processing techniques included. Prerequisites: A grade of C or better in WRT140, or permission of Department or Division.
Introduction to Surface Water Data Collection
Hands-on experience in surface water data collection while stressing safe practices. Map reading and navigation, field inspections, accessing, collecting, and recording surface water data. Prerequisites or Corequisites: WRT150, or permission of Department or Division.

Water Resources Field Investigations I: Groundwater and Surface Water
Hands-on experience and field exercises to acquire surface water and groundwater data and service data-gathering equipment. Hands-on experience in surface water data collection while stressing safe practices. Map reading and navigation, field inspections, accessing, collecting, and recording surface water and groundwater data. Safety procedures stressed. Prerequisites or Corequisites: WRT130 and WRT150, or permission of Department or Division.

Water Resources Technologies Seminar
Interaction with other students and professionals in the water resources technologies industry. Stress placed on sharing knowledge and demonstrating understanding through discussion of current issues in the industry, operational tasks, and emerging issues. Prerequisites: None.

Power and Instrumentation
Principles of basic electricity, electrical circuits, motors, transformers, and process control instrumentation. Prerequisites: A grade of C or better in WRT110, or WRT121, or Corequisites: WRT110, or WRT121, or permission of Department or Division.

Membrane Technologies
Fundamentals of reverse osmosis. Basic theory and function of membrane technologies, membrane design and use, element configuration, maintenance, and record keeping. Prerequisites: A grade of C or better in WRT110 or WRT121 and (WRT140 and WRT140LL) or permission of Department or Division.

Water and Wastewater Treatment Plants Administration
Administration safety and maintenance of water and wastewater treatment plants. Handling and disposal of process wastes and instrumentation use. Emphasis on reporting data in reports, graphs, and record keeping. Prerequisites or Corequisites: WRT110 or WRT121.

Water Quality
Fundamental chemical and physical factors involved in evaluating water quality. Water quality deterioration from landfills, underground storage tanks, and hazardous waste. Sampling techniques of groundwater, soil, and surface water. Quality assurance, quality control, and data processing techniques included. Prerequisites: A grade of C or better in WRT140, or permission of Department or Division.
WRT240LL Lecture 1 Credit 3 Periods
Water Quality Field Techniques
Field exercises to acquire water quality data and service data-gathering equipment. Safety procedures stressed. Prerequisites or Corequisites: WRT240 or permission of Department or Division.

WRT250 Lecture 3 Credits 3 Periods
Surface Water Hydrology
Fundamentals of surface water, understanding of surface water features, and characteristics and parameters impacting surface water features. Conducting hydrologic modeling and on modeling itself. Prerequisites: A grade of C or better in WRT117 and WRT150, or permission of Department or Division.

WRT252 Lec + Lab 3 Credits 6 Periods
Water Resources Field Investigations II: Surveying and Surface Water
Field reconnaissance of water resources. Lab experiences in surveying techniques and procedures. Field exercises to acquire surface water data and develop hydrologic models. Safety procedures stressed. Prerequisites or Corequisites: WRT125 and WRT250.

WRT260 Lec + Lab 3 Credits 5 Periods
Applied Hydrology: Groundwater, Surface Water and Water Quality
Theory and project-based experience in water resources technology. Data collection, data processing and data interpretation for groundwater, surface water and water quality studies. Using and servicing data-gathering equipment. Safety procedures stressed. Prerequisites: A grade of C or better in (WRT152, WRT240LL, and WRT252), or permission of Department or Division.

WRT270AA Lab 1 Credit 6 Periods
Water Resources Internship
Water resources work experience in business, industry, or government. Eighty (80) hours of designated work per credit. Prerequisites: Permission of Department or Division.

WRT270AB Lab 2 Credits 12 Periods
Water Resources Internship
Water resources work experience in business, industry, or government. Eighty (80) hours of designated work per credit (total of one hundred sixty (160) hours). Prerequisites: Permission of Department or Division.

WRT270AC Lab 3 Credits 18 Periods
Water Resources Internship
Water resources work experience in business, industry, or government. Eighty (80) hours of designated work per credit (total of two hundred forty (240) hours). Prerequisites: Permission of Department or Division.

WRT280AA Lecture 0.5 Credits 0.5 Periods
Arizona Water Certification Review: Treatment Grades 1 and 2
Refresher course in preparation for state certification testing for the operation, supervision and administration of water treatment systems. Prerequisites: None.

WRT280AC Lecture 0.5 Credits 0.5 Periods
Arizona Water Certification Review: Distribution Grades 1 and 2
Refresher course in preparation for state certification testing for the operation, supervision and administration of water distribution systems. Prerequisites: None.

WRT281AA Lecture 0.5 Credits 0.5 Periods
Arizona Wastewater Certification Review: Wastewater Treatment Grades 1 and 2
Refresher course in preparation for state certification testing for the operation, supervision and administration of wastewater treatment systems. Prerequisites: None.

WRT281AC Lecture 0.5 Credits 0.5 Periods
Arizona Wastewater Certification Review: Collections Grades 1 and 2
Refresher course in preparation for state certification testing for the operation, supervision and administration of wastewater collection systems. Prerequisites: None.

WRT298AC Lab 3 Credits 3 Periods
Special Projects
Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development. Prerequisites: Permission of Program Director or Instructor.

(WTO) WELDING

WTO111 60 Clock Hours
Introduction to Welding
Learn basic safety procedures and equipment, while using fuel and electric cutting processes for the preparation of base materials for welding operations. Prerequisites: None.

WTO112 120 Clock Hours
Basic Welding (SMAW)
Examines codes used in welding and testing procedures, welding equipment setup, preparation, and striking an arc in the shielded metal arc welding (SMAW) process, while also learning the different types of filler materials and their proper storage. Prerequisites: None.

WTO113 94 Clock Hours
Welding Techniques (SMAW)
Explore the importance of devices used to align, fit-up and prepare joints for welding, while introducing open-groove weld techniques for in-position and out-of-position applications using the shielded metal arc welding (SMAW) process. Prerequisites: None.

WTO114 124 Clock Hours
Qualification Welds (SMAW)
Learn a procedure or specification to perform out-of-position welds to meet and qualify to a code or standard with focus on vertical and overhead welding using the shielded metal arc welding (SMAW) process. Prerequisites: None.

WTO121 140 Clock Hours
Welding (GMAW)
Identify and learn how to read welding detail drawings with welding symbols, using notes and bill of materials. Train in safety procedures, general equipment, filler materials and shielding gases used and how to make fillet and groove welds in various positions for gas metal arc welding (GMAW). Prerequisites: None.
### Course Listings 2019-2020

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<thead>
<tr>
<th>Course Code</th>
<th>Type</th>
<th>Credits</th>
<th>Periods</th>
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<tr>
<td>WRT240LL</td>
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<td><strong>Water Quality Field Techniques</strong></td>
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<td>WRT250</td>
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<td><strong>Surface Water Hydrology</strong></td>
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<td>WRT252</td>
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<td><strong>Water Resources Field Investigations II: Surveying and Surface Water</strong></td>
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<td><strong>Applied Hydrology: Groundwater, Surface Water and Water Quality</strong></td>
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### (WTO) WELDING

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<th>WTO111</th>
<th>60 Clock Hours</th>
<th><strong>Introduction to Welding</strong></th>
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<td>Learn basic safety procedures and equipment, while using fuel and electric cutting processes for the preparation of base materials for welding operations. Prerequisites: None.</td>
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<th>WTO112</th>
<th>120 Clock Hours</th>
<th><strong>Basic Welding (SMAW)</strong></th>
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<td>Examines codes used in welding and testing procedures, welding equipment setup, preparation, and striking an arc in the shielded metal arc welding (SMAW) process, while also learning the different types of filler materials and their proper storage. Prerequisites: None.</td>
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<th>WTO113</th>
<th>94 Clock Hours</th>
<th><strong>Welding Techniques (SMAW)</strong></th>
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<td>Explore the importance of devices used to align, fit-up and prepare joints for welding, while introducing open-groove weld techniques for in-position and out-of-position applications using the shielded metal arc welding (SMAW) process. Prerequisites: None.</td>
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<th>WTO114</th>
<th>124 Clock Hours</th>
<th><strong>Qualification Welds (SMAW)</strong></th>
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<td>Learn a procedure or specification to perform out-of-position welds to meet and qualify to a code or standard with focus on vertical and overhead welding using the shielded metal arc welding (SMAW) process. Prerequisites: None.</td>
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<th>140 Clock Hours</th>
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<td>Identify and learn how to read welding detail drawings with welding symbols, using notes and bill of materials. Train in safety procedures, general equipment, filler materials and shielding gases used and how to make fillet and groove welds in various positions for gas metal arc welding (GMAW). Prerequisites: None.</td>
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<td>Course Code</td>
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<td>WTO123</td>
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<td>Welding (GTAW) Carbon Steel</td>
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<td>WTO131</td>
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<td>Weld Techniques Pipe (SMAW)</td>
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<td>Weld Techniques Pipe (GTAW)</td>
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<tr>
<td>WTO147</td>
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<td>GTAW Stainless Steel</td>
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ADMINISTRATION AND FACULTY
ADMINISTRATION
MARICOPA COMMUNITY COLLEGE DISTRICT

Dr. Maria Harper-Marinick ................. Chancellor
Ms. Leslie Cooper ......................... General Counsel
Dr. Karla Fisher ......................... Provost
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Ms. Darcy Renflo ....................... Chief of Staff
Mr. Brian Spicker .................... President and Chief Executive Officer

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B.S., Slippery Rock State University; M.B.A., University of Dayton
Diaz, Amy ..................... Vice President, Academic Affairs

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Brown, Terese ..................... Dean, Student Affairs
B.A. in English, Morgan State University; JD, University of Maryland Law School
Wurster, C.J. ..................... Dean, Trade and Technical Training
B.S. Criminal Justice/American Politics, Rochester Institute of Technology; Master of Administration, Northern Arizona University
Yena, Lauren ..................... Dean, Liberal Arts and Learning Support, Academic Affairs; B.A., University of Miami; M.A., University of Florida; Ph.D., Arizona State University

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B.S., M.S., Ed.D., University of Arizona

B.S., University of Phoenix; MSN, Grand Canyon University

Carnevale, Paul.......................................... Vice President, Nursing

Dep., M.S., Grand Canyon University

Church, Timothy...................................... Biology
D.C., Palmer University

Cooper, Jason.......................................... Automotive Technology
B.S., Northern Arizona University; Masters Certification, Automotive Service Excellence

Crimando, James...................................... Biology
B.S., Ph.D., Arizona State University

Cummings, Ellen........................................ Program Director
Concurrent Enrollment Program / Nursing: A.A.S., Scottsdale Community College; B.S.N., M.S.N., University of Phoenix

DiMaggio, Linda........................................ Nursing
B.S., Excelsior College; M.S.N.-Ed, Grand Canyon University; PCCN, CHRN

DeBaun, David........................................ Industrial Technology

Dodd, Bryan............................................. Program Director
Diagnostic Medical Sonography: A.A.S., George Washington University; B.S.E., Arizona State University; M.D., Northern Arizona University

Doss, Dominique....................................... Counseling
B.A., University of Portland; M.A., Loyola University Chicago; Psy.D., Argosy University, Phoenix

Edgar, Patricia.......................................... Court Reporting
B.S., University of Phoenix; M.ed., Northern Arizona University

Bush, Carol.............................................. Nursing
Simulation Coordinator A.D. Milwaukee Area Technical College; B.S.N., M.S.N., Grand Canyon University

Fenske, Eric.......................................... Automotive Technology
Program Director: A.A.S., Gateway Community College; B.S., Arizona State University

Fox, Renee............................................. Nursing
M.A., University of Iowa; M.S.N., Grand Canyon University

Gaberde, Justin......................................... Mathematics
Honors Coordinator and SLICE Faculty Liaison; B.S., Mathematics, B.A. Communication, University of Arizona; M.Ed., Arizona State University

Garneau, Ashley....................................... Nursing
A.A.S., Gateway Community College; B.A., Arizona State University; M.S., Northern Arizona University; Ph.D, Capella University

Godfrey, Susan................................. Nuclear Medicine Technology
A.A.S., Ferris State College; B.S., Northern Arizona University

Goodrich, Gregory................................. Philosophy
B.A. Philosophy, Northern Arizona University; B.A. history, Northern Arizona University; M.A. Philosophy, Arizona State University

Goodman, Jessica................................. HUG Coordinator / PTA PAR Coordinator; Physical Therapist Assisting: D.P.T., Creighton University

Guest, Richard................................. Manufacturing

Hall, Donald................................. Humanities/Communication/Theatre
B.A., University of Michigan; M.A., Arizona State University

Hammerschmidt, Soren................................. English
B.A, M.A English Language, University of Edinburgh; Ph.D., English, University of California, Santa Barbara

Hatfield, Tabatha........................................ Program Director
Health Science Continuing Education and Post-Primary Health Care: Diagnostic Medical Sonography MA, RT(R), RDMS, RVT

Hightower, Nicolle................................. Medical Radiography
A.A.S., Gateway Community College; B.S.-D.M.T., M.Ed., Northern Arizona University

Hinski, Sandra................................. Division Chair
Medical Imaging and Cardiopulmonary Sciences; Curriculum Development Facilitator; Respiratory Care B.S., M.S., Georgia State University; Ph.D, Arizona State University

Gonzales, Steven R................................. President
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Diaz, Amy............................................. Vice President, Academic Affairs

COLLEGE PRESIDENTS

Dr. Paul Dale .................Paradise Valley Community College
Dr. Steven Gonzales......... Gateway Community College
Dr. Christina M. Haines ....Scottsdale Community College
Dr. Richard Haney ............. Mesa Community College
Dr. Larry Johnson, Jr. ......... Phoenix College
Dr. Rey Rivera ................. Estrella Mountain Community College
Dr. Teresa Leyba-Buzi ......... Glendale Community College
Dr. Shari L. Olson ............. South Mountain Community College
Dr. Greg Peterson...........Chandler/Gilbert Community College
Ms. Kate Smith .................. Rio Salado Community College

GATEWAY COMMUNITY COLLEGE

Gonzales, Steven R................................. President
B.S., M.A., Northern Arizona University; Ed.D., University of Texas

Asta, Tony............................................. Vice President, Administrative Services
B.S., Slippery Rock State University; M.B.A., University of Dayton

Diaz, Amy............................................. Vice President, Academic Affairs
Hoewing, Bonnie...........................................Program Coordinator
Reading and CRE B.A.; M.Ed., University of Northern Iowa; Ph.D., University of Iowa

Hunter, Ferdinand.................................Program Coordinator
English, ENH, and Creative Writing; B.A., Emory University; M.F.A., Brown University

Hutchins, Heidi...........................................Business
Honors B.A.; University of Utah; M.H.S.A., M.B.A., Arizona State University

Ikegwuonu, Tiffany.................................Diagnostic Medical Sonography
Health Sciences Clinical Coordinator; RDMDS; RV'T; C.C.L., Diagnostic Medical Sonography, GateWay Community College; B.S.; Bowling Green State University

Johnson, Brad...........................................Program Director
Medical Radiography; A.S., Rochester Community Technical College; B.S., University of St. Francis; M.Ed., Northern Arizona State University

Johnson, Wyatt...........................................Program Director
Operating System and Networking Technologies; B.S., Grand Canyon M.Ed.; Arizona State University

Jolly, Matthew...........................................English
Faculty Developer; B.A., Lycoming College; F.A.; Arizona State University

Kawasaki, Emi..........................................Library
B.A., Tsuda College; M.Ed., Northern Arizona University; M.A., University of Arizona

Kelly, John..............................................Industrial Technology/Automotive
Sabbatical; B.A., Arizona State University; M.Tech., Arizona State University

Kenney, James.........................................HVAC/Facilities
HVAC Program Director

Krusden, Tiffany........................................Nursing
A.A.S. in Nursing, GateWay Community College; B.S.N., Grand Canyon University; RN; MSN-Ed, Western Governors University

Komlodi, Candace......................................Reading
B.S., Indiana University; M.Ed., University of Pittsburgh Ed.D., Northern Arizona University

Lastine, Jeri..............................................Assistant Director of Nursing
Coordinator, Practical Nursing; B.S.N., Winona State University; M.S.N., University of Phoenix

Leaf, Julia................................................Nursing
B.S.N., RN, CCRN

Leitz Hanley, Sarah...................................Counseling
M.S.P.C., Grand Canyon University

Lenartz, Andrew......................................Psychology
Sabbatical; M.S., University of Wisconsin-Stout; Ed.D., Northern Arizona University

Lupo, Diane............................................Respiratory Care
B.A., Ottawa University

Lynch, Kathy............................................Department Chair, Library
B.A., Hartwick College; M.L.S., University of Arizona

Malapanes, Elizabeth...............................Library
B.A., M.L.S., University of Arizona

McGrath, Shannon.................................Division Chair
Literacy, Language and Literature; Program Coordinator ESL/ESOL/English; B.A., Brigham Young University; M.A., Arizona State University

Mckee, Anderson Sharon.............................Nursing
A.A.S., Phoenix College; B.S.N., M.S.N., Ph.D., University of Phoenix

Melenovich, Peter....................................Nursing
A.A.S., GateWay Community College; B.S.N., M.S. Arizona State University; Ph.D., Capella University

Mendoza-Moreno, Patricia...........................Nursing
B.S.N., Arizona State University; M.S.N., University of Phoenix

Miller, Joseph.........................................Respiratory Care
A.S., Biosystems Institute; M.S., University of Phoenix

Mills, Susan.............................................Division Chair
Arts, Humanities, Social & Behavioral Sciences; Program Coordinator Study Abroad; Arts Faculty; B.F.A, University of Illinois, Urbana Champaign; M.F.A., Southern Illinois University

Milner, Paula...........................................Nursing
B.S.N., University of Cincinnati; M.S., Arizona State University

Mims, Christopher.................................Communication
B.A., M.A. Arizona State University; M.Ed., Northern Arizona University

Novak, Patricia.......................................Nursing
A.A.S., University of South Dakota; B.S.N., M.S.N., University of Phoenix

Nugent, Wendi........................................Program Director
Electroneurodiagnostic Technology, Health Service Management; Healthcare Regulatory Compliance; Polysomnography Technology A.A., Golden West Community College; Certification Electroneurodiagnostic Technology, Orange Coast College; M.B.A., Simmons School of Management

Omelas, Linda.........................................Nursing
B.S.N., University of North Dakota; M.S., Arizona State University

Patterson, Kathryn..................................Respiratory Care
A.S., Suffolk Community College; B.S., Northern Arizona University

Permoda, Linda.........................................Nursing
B.S.N., D'Youville College; M.S.N., University of Phoenix

Peterson, Jeanette.................................Program Director
Nursing Continuing Education; M.S.N., RN, CNE, CHSE, VA-BC, University of Phoenix

Pomeranz, Marla.................................Program Director
Occupational Therapy Assisting; OTD, Master in OT, A.T. Still University; M.Ed., Northern Arizona University; Master in Elementary Education; Endorsement in Special Education and Middle Level Education

Reed, Nancy............................................Nursing
RN Residential Faculty; B.S.N., Indiana University; M.S.N., Ball State University

Rice, Brian.............................................Program Director
Year Up and CIS; Faculty Business and Information Technologies; B.S., Emporia State University; M.S., University of Idaho; Ph.D., University of Missouri at Kansas City

Rozell, Marie.................................Clinical Nursing Coordinator
A.S., Loma Linda University; B.S., Regents College of the University of New York M.C.C., Christian International University; M.S.N., Grand Canyon University

Romlowsky, Kelly....................................English
B.A., University of South Florida, Tampa; M.A., University of South Florida, Tampa Ed.D., Arizona State University

Ruth, Shannon.................................Math Coordinator
Math Club Advisor; Mathematics; B.S., Gonzaga University; M.A., Northern Arizona University

Safa, Laura............................................Physical Therapy Assisting
A.A.S., Gateway Community College; BA, Ottawa University

Santicola, Craig.................................Division Chair
Business and Information Technology; BA in Business/ Economics, Southeastern Louisiana University; MBA, Southeastern Louisiana University; Ph.D. in Instructional Management and Leadership, Robert Morris University

Schartz, Tracey.................................Director of Clinical Education
Faculty for Respiratory Care Program; Respiratory BS, RRT, VA-BC, Master's Degree, Educational Leadership, Northern Arizona University

Schultz, Margi........................................Division Chair
Nursing Division; Nursing A.A.S., Gateway Community College; B.S.N., M.S.N., University of Phoenix; Ph.D., Capella University

Sherrell, Karin........................................Nursing
Diploma, Bronson School of Nursing; B.S.N., M.S.N., University of Phoenix; N.Ed, Arizona State University

Searman, Stephanie A.............................Program Director
Court Reporting; A.A.S., Phoenix College; B.A., M.Ed., Northern Arizona University

Swaba, Joseph.................................Faculty Senate President
Communication M.A.Ed., University of Phoenix; M.A, Ed.D., Northern Arizona University

Thompson, Brandy.................................Clinical Coordinator
Hospital Central Service, Surgical Technology, Surgical Technology for Operating Nurse; Hospital Central Service A.A.S., Gateway Community College; B.S.N., Arizona State University

Tome, Susan...........................................Program Director
Hospital Central Services/Surgical Technology/Operating Room Nursing; B.S.N., University of Arizona; M.S., College of St. Francis

Torrey-Banks, Annette............................Program Director
Accounting, and CIS; B.A., Capital University; M.Ed., University of Dayton

Vot, Victoria............................................Nursing
RN, M.S.N., Walden University

Urbanski, Craig.................................Division Chair
Industrial Technology; Program Director Water Resources; Water Resource Technology Faculty; Occupational Health & Safety Faculty; B.S., M.S., University of Central Missouri; Ph.D., Capella University

Vingschea, Danny.................................Mathematics
B.S., Arizona State University; M.Ed, Arizona State University

Wadsworth-Beisel, Monica..........................Division Chair
Allied Health; Program Director; Health Unit Coordinating and Patient Care Associate; B.S., Arizona State University; M.Ed., Northern Arizona University

Walker, Douglas.................................Division Chair, Math & Sciences
Mathematics; B.A., Saint Olaf College; M.S., Iowa State University

Weaver, Kevin......................................Manufacturing
**Administration and Faculty**

**Hoewing, Bonnie**                      Program Coordinator  
Reading and CRE, B.A., M.Ed., University of Northern Iowa  
Ph.D., University of Iowa

**Hunter, Ferdinand**                     Program Coordinator  
English, ENH, and Creative Writing; B.A., Emory University  
M.F.A., Brown University

**Hutchins, Heidi**                       Business  
Honors B.A., University of Utah; M.H.S.A., M.B.A., Arizona State University

**Ikegwuoru, Tiffany**                   Diagnostic Medical Sonography  
Health Sciences Clinical Coordinator; RDMs; RVT; C.C.L., Diagnostic Medical Sonography, GateWay Community College; B.S.; Bowling Green State University

**Johnson, Brad**                        Program Director  
Program Medical Radiography; A.S., Rochester Community and Technical College; B.S., University of St. Francis; M.Ed., Northern Arizona University

**Johnson, Wyatt**                       Program Director  
Operating System and Networking Technologies; B.S., Grand Canyon M.Ed.; Arizona State University

**Jolly, Matthew**                        English  
Faculty Developer; B.A., Lycoming College; F.A.; Arizona State University

**Kawasaki, Emi**                        Library  
B.A., Tsuda College; M.Ed., Northern Arizona University; M.A., University of Arizona

**Kelly, John**                          Industrial Technology/Automobile   
Sabbatical; B.A.E., Arizona State University; M.Tech., Arizona State University

**Kenney, James**                        HVAC/Facilities  
HVAC Program Director

**Knudson, Tiffany**                     Nursing  
A.A.S. in Nursing, GateWay Community College; B.S.N., Grand Canyon University; RN; M.S.N., Western Governors University

**Komlodi, Candace**                     Reading  
B.S., Indiana University; M.Ed., University of Pittsburgh Ed.D., Northern Arizona University

**Lastine, Jeri**                        Assistant Director of Nursing Coordinator, Practical Nursing; B.S.N., Winona State University; M.S.N., University of Phoenix

**Leaf, Julia**                          Nursing  
M.S.N., RN, CCRN

**Leitz Hanley, Sarah**                  Counseling  
M.S.P.C., Grand Canyon University

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**Administration and Faculty**

**Lenartz, Andrew**                      Psychology  
Sabbatical; M.S., University of Wisconsin-Stout; Ed.D., Northern Arizona University

**Lupo, Diane**                          Respiratory Care  
B.A., Ottawa University

**Lynch, Kathy**                         Department Chair, Library  
B.A., Hartwick College; M.L.S., University of Arizona

**Malapanes, Elizabeth**                Library  
B.A., M.L.S., University of Arizona

**McGrath, Shannon**                     Division Chair  
Literacy, Language and Literature; Program Coordinator ESL/ESOL/English; B.A., Brigham Young University; M.A., Arizona State University

**McKee, Anderson Sharon**              Nursing  
A.A.S., Phoenix College; B.S.N., M.S.N., Ph.D., University of Phoenix

**Menolovich, Peter**                    Nursing  
A.A.S., GateWay Community College; B.S.N., M.S., Arizona State University; Ph.D., Capella University

**Mendoza-Moreno, Patricia**            Nursing  
B.S.N., Arizona State University; M.S.N., University of Phoenix

**Miller, Joseph**                       Respiratory Care  
A.S., Biosystems Institute; M.S., University of Phoenix

**Mills, Susan**                         Division Chair  
Arts, Humanities, Social & Behavioral Sciences; Program Coordinator Study Abroad; Arts Faculty; B.F.A, University of Illinois, Urbana Champaign; M.F.A., Southern Illinois University

**Milner, Paula**                        Nursing  
B.S.N., University of Cincinnati; M.S., Arizona State University

**Mims, Christopher**                   Communication  
B.A., M.A., Arizona State University; M.Ed., Northern Arizona University

**Novak, Patricia**                     Nursing  
A.A.S., University of South Dakota; B.S.N., M.S.N., University of Phoenix

**Nugent, Wendie**                      Program Director  
Electroneurodiagnostic Technology, Health Service Management, Healthcare Regulatory Compliance; Polysomnography Technology A.A., Golden West Community College; Certification Electroneurodiagnostic Technology, Orange Coast College; M.B.A., Simmons School of Management
Administration and Faculty

Willey, Herbert ................................................................. Biology
B.S., Northern Arizona University; M.S., Northern Arizona University

Wilt, Michelle .........................................................Medical Radiography
M.H.A., R.T(R)(M); Bachelor's Degree, Minnesota State University; Master's Degree, University of Phoenix

Woods, Kristen ..............................................................Program Director, Nursing Assistant; B.S.N., Methodist College of Nursing; M.N., University of Phoenix

Zamora, David ...................................Program Director, Manufacturing Production and Design Technology, A.A.S., Albuquerque Technical Vocational Institute; A.A.S., Mesa Community College; B.S., M.S., Arizona State University

Zamora, Frank ..................................................Department Chair Counseling; B.S.W., Arizona State University; M.Ed.; Northern Arizona University

Zawicki, Peter ..............................................................Program Director, Physical Therapist Assisting; B.S., University of Illinois; M.S., DePaul University

Zygowicz, Sharon .......................................................Counseling; B.A., M.C., Ph.D., Arizona State University

FACULTY EMERITUS

Backus, Alex S. (1972-2005) ..................Medical Radiography
B.S., Albion-Broadus College; M.S., State University of New York at Buffalo

Baugh, James (1994-2016) .......................Mathematics
B.S., United States Military Academy; M.B.A., Long Island University; M.N.S., Ed.D., Arizona State University

Borze, Ilene (1994-2018) .................................Nursing Continuing Education
B.S.N., M.S., Arizona State University

Carrillo, Mary (2003-2017) ......................Medical Radiography
A.A., Dekruza College; A.S., Foothill College; B.S., M.B.A., University of Phoenix

B.S., University of Arizona; Ph.D., Arizona State University

Fenske, Marie A. (1986-2009) ...............Respiratory Care
A.A.S., Kirkwood Community College
B.S., M.S., Ed.D., Arizona State University

Hoskins, Edward (1995-2017) ...............Respiratory Care/Health Science
A.A., Maricopa Technical Community College; B.A., Ottawa University; M.Ed.; Northern Arizona University

Huffman, Vincent (1981-2016) ...............Anthropology/Social Work
M.A., Ball State University

Lampignano, John (1982-2016) .................Teaching & Learning
A.A., GateWay Community College; B.S. Weber State College; M.Ed., Arizona State University

Lucius, Catherine (1982-2008) .................Nursing
B.S.N., M.S., Arizona State University

Perry, Clyde (1990-2012) ..................HVAC/Facilities
B.S., University of Southern Maine
M.Ed., Ed.D., Northern Arizona University

Rasmussen, Geraldine A. (1980-2008) ...........Liberal Arts
A.A., GateWay Community College; B.A., M.Ed., Arizona State University

Rodriguez, Toni (1982-2018) ..................Respiratory Care
A.S., Alleghehny Community College; B.S., University of Pittsburgh; M.Ed., Ed.D., Arizona State University; FAARC; Fellow American Association/Respiratory Care

B.A., College of Wooster; M.A., Arizona State University

Stover, Dean (1996-2016) .........................English
B.A., M.F.A., Arizona State University

Thiessen, Charlene (1997 - 2017) .............Medical Transcription/Health Science; M.Ed., Northern Arizona University

Vrabel, Kerry S (2001-2017) .....................Literacy, Language & Literature
B.S., Benedictine University, Illinois; M.A., Hunter College of the City University of New York

CLOCK HOUR INSTRUCTORS

Abadia, Lidia ..................................................Healthcare Medical Assistant Instructor; R.M.A., American Medical Technologists; M.A. Certificate Program, Estrella Mountain Community College, B.Ed., Immaculata University

Allen, Adelomi ...............................................Trades & Technology
Computer Instructor; CompTIA A+ and CTT+ Certification; M.C.P. - Microsoft Certified Professional; M.C.S.E. - Microsoft Certified Systems Engineer; B.S., New York Institute of Technology; M.S., Nova Southeastern University

Bauer, Kimberly ...........................................Beauty & Wellness
Licensed Cosmetology Instructor; B.S.A., Grand Canyon University

Berberian, Janeen ..................................Healthcare Program Manager
Medical Assistant and Medical Billing and Coding Programs; B.S., Northern Arizona University; D.C., LifeChiropractic College West

Blackman, Aimee ............................................Beauty & Wellness
Licensed Cosmetology Instructor

Bowman, Angelica .......................................Healthcare Medical Assistant Instructor; N.C.M.A.; C.C.L., X-Ray Technician/Management Assistant, Modern Technology School; C.C.L., Medical Assistant, Downey Adult School

Brumlow, M. Grant ........................................Trades & Technology
X-8 USA Instructor/Training Certification; G.T.A.W. 1G & 2G

Brussels, Miguel ...........................................Beauty & Wellness
Licensed Aesthetic Instructor

Burke, Justin ..................................................Healthcare E.M.S. & Fire Academy Instructor; AA, Phoenix College; B.S., Northern Arizona University; Firefighter I & II; E.V.O.C. Instructor; A.H.A. B.L.S. Instructor

Castillo, Jim ..................................................Healthcare Medical Billing and Coding Instructor; Certified Professional Coder (C.P.C.); A.A.S., Rio Salado Community College

Cazares, Monica .................................................Healthcare Phlebotomy Instructor; R.M.A. and R.P.T., Bryman College

Cooper, Brent .....................................................Trades & Technology
Collision Repair Instructor; I.C.A.R. Structural Gold; AZDOE Teaching Certificate - C.T.E., K-12; LPN; A.A., Phoenix College

Administration and Faculty
Administration and Faculty

Wildey, Herbert................................................. Biology
B.S., Northern Arizona University; M.S., Northern Arizona University

Witt, Michelle.......................................................Medical Radiography
M.H.A., RT(R)M; Bachelor's Degree, Minnesota State University; Master's Degree, University of Phoenix

Woods, Kristen......................................................Program Director, Nursing Assistant; B.S.N., Methodist College of Nursing; M.N., University of Phoenix

Zamora, David.................................................................Hayes Instructor
A.A., GateWay Community College; B.S. Weber State College; M.Ed, Arizona State University

Zamora, David.................................................................Hayes Instructor
A.A., GateWay Community College; B.S. Weber State College; M.Ed, Arizona State University

Zamora, David.................................................................Hayes Instructor
A.A., GateWay Community College; B.S. Weber State College; M.Ed, Arizona State University

Zamora, David.................................................................Hayes Instructor
A.A., GateWay Community College; B.S. Weber State College; M.Ed, Arizona State University

Zawicki, Peter.........................................................Program Director
Ph.D, University of Illinois; M.S., DePaul University

Zygowicz, Sharon...................................................... Counseling
B.A., M.C., Ph.D., Arizona State University

FACULTY EMERITUS

Backus, Alex S. (1972-2005).................................Medical Radiography
B.S., Alderson-Broaddus College; M.S., State University of New York at Buffalo

Baugh, James (1994-2016).................................Mathematics
B.S., United States Military Academy; M.B.A, Long Island University; M.N.S., Ed.B, Arizona State University

Borze, Ilene (1994-2018)..............................Nursing Continuing Education
B.S.N., M.S., Arizona State University

Carrillo, Mary (2003-2017).........................Medical Radiography
A.A., Del Norte College; A.S., Foothill College; B.S., M.B.A., University of Phoenix

Counts, Willie R. (1978-2008).........................Psychology
B.S., University of Arizona; Ph.D, Arizona State University

Fenske, Marie A. (1986-2009)............................Respiratory Care
A.A.S., Kirkwood Community College
B.S., M.S., Ed.D, Arizona State University

Hoskins, Edward (1995-2017)............................Respiratory Care/Health Science
A.A., Maricopa Technical Community College; B.A., Ottawa University; M.Ed, Northern Arizona University

Huffman, Vincent (1981-2016)....................Anthropology/Social Work
M.A., Ball State University

Lampignano, John (1982-2016)....................Teaching & Learning
A.A. GateWay Community College; B.S. Weber State College; M.Ed, Arizona State University

Lucius, Catherine (1982-2008).......................Nursing
B.S.N., M.S., Arizona State University

Perry, Clyde (1992-2012)..............................HVAC/Facilities
B.S., University of Southern Maine

Rasmussen, Geraldine A. (1980-2008)..............Liberal Arts
A.A., GateWay Community College; B.A., M.Ed, Arizona State University

Rodriguez, Toni (1982-2018).....................Respiratory Care
A.S., Allegheny Community College; B.S., University of Pittsburgh; M.Ed, Ed.D, Arizona State University; FAARC, Fellow American Association/Respiratory Care

Shay, Gail (1987-2008).................................Spanish/ESL/Communication
B.A., College of Wooster; M.A., Arizona State University

Stover, Dean (1996-2016)...............................English
B.A., M.F.A, Arizona State University

Thiessen, Charlene (1997 - 2017)................Medical Transcription/Health Science
M.Ed, Northern Arizona University

Vrabel, Kerry S. (2001-2017)..........Literacy, Language & Literature/English
ESOL; B.S., Benedictine University, Illinois; M.A., Hunter College of the City University of New York

Closet Hour Instructors

Abadia, Lidia..........................................................Healthcare
Medical Assistant Instructor; R.M.A., American Medical Technologists; M.A. Certificate Program, Estrella Mountain Community College, B.Ed., Immaculate University

Allen, Adeline...................................................Trades & Technology
Computer Instructor; Comp/TAA+ and CTT+C Certification; M.C.P. - Microsoft Certified Professional; M.C.S.E. - Microsoft Certified Systems Engineer; B.S., New York Institute of Technology; M.S., Nova Southeastern University

Bauer, Kimberly..................................................Beauty & Wellness
Licensed Cosmetology Instructor; B.S.A., Grand Canyon University

Berberian, Janeen...........................................Healthcare Program Manager
Medical Assistant and Medical Billing and Coding Programs; B.S., Northern Arizona University; D.C., Life Chiropractic College West

Blackman, Armea..................................................Beauty & Wellness
Licensed Cosmetology Instructor

Bowman, Angelica..................................................Healthcare
Medical Assistant Instructor; N.C.M.A. (C.C.L), X-Ray Technician/Medical Assistant, Modern Technology School; C.C.L, Medical Assistant, Downey Adult School

Bromlow, M. Grant.................................Trades & Technology
X-8 USA Instructor/Training Certification; G.T.A.W. 1G & 2G

Brussels, Miguel..................................................Beauty & Wellness
Licensed Aesthetic Instructor

Burke, Justin..................................................Healthcare
E.M.S. & Fire Academy Instructor; A.A., Phoenix College; B.S., Northern Arizona University; Firefighter I & II; E.V.O.C. Instructor; A.H.A. B.L.S. Instructor

Castillo, Kia..................................................Trades & Technology
Medical Billing and Coding Instructor; Certified Professional Coder (C.P.C.); A.A.S., Rio Salado Community College

Cazares, Monica..................................................Healthcare
Phlebotomy Instructor; R.M.A. and R.P.T., Bryman College

Cooper, Brent.............................................................Trades & Technology
Collision Repair Instructor; I.C.A.R. Structural Gold; AZDOE Teaching Certificate - C.T.E., K-12; L.P.N; A.A., Phoenix College

Davis, Daniel..................................................Healthcare Program Manager
Emergency Medical Technology Program; N.R.E.M.T. Paramedic; AZDHS Certified Emergency Paramedic; A.H.A. Instructor; B.L.S.; N.A.E.M.S.E. Instructor I; Firefighter I & 2; A.C.L.S.; P.A.L.S.

Diaz, Cuashtemoc (C.D.).................................Trades & Technology
Electrical Instructor; O.S.H.A. Trainer; N.C.C.E.R. Craft Instructor

Diehl, Robin.....................................................Beauty & Wellness
Licensed Cosmetology Instructor

Dveirin, Shala.....................................................Beauty & Wellness
Licensed Cosmetology Instructor

Espoo, Ceci..............................................................Healthcare
Spanish Medical Interpreter Instructor: C.H.I. Certified Healthcare Interpreter

Gaiser, Alan......................................................Trades & Technology
Welding Instructor; O.S.H.A. Trainer; N.C.C.E.R.

Greenberg, Bradley........................................Education Services Partnerships and ESP; B.S., Pensacola Christian College; B.S., University of Phoenix; M.S., Peru State College

Hayes, Timeka.....................................................Beauty & Wellness
Licensed Cosmetology Instructor

Hernandez, James (Jay).................................Trades & Technology
Meat Cutting Instructor; Meat Cutting Apprentice Certificate, Maricopa Skill Center

Hernandez, Michael........................................Trades & Technology
Collision Repair Instructor; P.P.G. - Waterborne; P.P.G. - Solvent

Horn, Bridgett..................................................Beauty & Wellness
Licensed Cosmetology Instructor

Horne, Stephen...........................................Trades & Technology
HVAC Instructor; EPA Universal Certification; A.A. in Business Management

Kline, Jennifer..................................................Healthcare Program Manager
Administration and Faculty

Lederman, Rochelle (Shelley) ..........Beauty & Wellness  
Licensed Cosmetology Instructor

Little, Kelly ..........................................Beauty & Wellness  
Licensed Cosmetology Instructor

Licarraga, Kassandra .........................Healthcare  
Pharmacy Technician Instructor; Ph.T.; B.S., Arizona State University, M.S. Grand Canyon University

Lopez, Michael ....................................Trades & Technology  
Computer Instructor; Computer Support Specialist  
Certificate, Maricopa Skill Center

Macey, Paige .......................................Beauty & Wellness  
Licensed Cosmetology Instructor

Mendoza, Katy ......................................Essential Skills Program Manager  
Healthcare Interpreter

Niezwaag, Crissy ..................................Beauty & Wellness  
Aesthetics Instructor; Licensed Cosmetology Instructor

Nutter, Monica .................................Healthcare Program Director  
Medical Assistant and Medical Billing and Coding Programs; A.G.S., Phoenix Community College; C.M.A., American Association of Medical Assistants

Pee, Noelle .........................................Essential Skills Program Manager  
Instructor; M.S., Peru State College; B.S., University of Phoenix; B.S., Pensacola Christian College

Peebles, Regina ..................................Essential Skills Program Manager  
M.A., University of Missouri - St. Louis; B.A., Saint Louis University

Perez-Arreloa, Joanne .........................Trades & Technology  
Computer Foundations Instructor; IC3 - Internet Core  
Certification Competency; M.C.T.: Microsoft Certified Trainer; M.O.S.: Microsoft Office Specialist

Pritchett, Kassandra .............................Healthcare  

Rodriguez, Maria (Mary) .....................Beauty & Wellness  
Licensed Cosmetology Instructor

Salazar, Andrew ..................................Trades & Technology  
Meat Cutting Instructor; Meat Cutting Apprentice  
Certificate, Maricopa Skill Center

Smith, James .......................................Trades & Technology  
CNC Machining Instructor; N.I.M.S. Machining Level 1

Stovall, Susan ....................................Healthcare  
Medical Billing and Coding Instructor; A.A.S., Arizona Institute of Business and Technology; C.D.C. Certification; A.A.P.C., Medical Coding; C.F.C. Certification

Swan, Jennifer .................................Beauty & Wellness  
Licensed Aesthetics Instructor; Licensed Cosmetology Instructor

Tapscott, Michael ................................Beauty & Wellness  
Massage Therapy Instructor; Licensed Massage Therapist

Thompson, Bruce ...............................Trades & Technology  
Computer Foundations Instructor; IC3 - Internet Core  
Competency Certification; M.O.S. - Microsoft Office Specialist; B. A., Tuskegee University

Trotti, Tony ........................................Beauty & Wellness  
Licensed Cosmetology Instructor

Valdivia, Vivian ..................................Healthcare  
Medical Assistant Instructor; A.O.S., The Bryman School; R.M.A., B.P.T., A.H.I., American Medical Technologists; C.M.A., American Association of Medical Assistants, B.L.S. Instructor, American Safety & Health Institute

Woehr, R. Mark .................................Trades & Technology Program Manager  
OSHA Certified Trainer; N.C.C.R.: Craft Instructor

Ybarra, Mark Anthony ..........................Beauty & Wellness  
Massage Therapy Instructor; Licensed Massage Therapist

Yohe, Christina ....................................Healthcare  
E.M.S. & Fire Academy Instructor; B.S., University of Arizona; Firefighter I & II; Fire Instructor I; Hazmat Technician; Fire Inspector I; N.R.E.M.T. Paramedic; A.Z.D.H.S. Certified Emergency Paramedic; A.S.H.I B.L.S. Instructor

GATEWAY ADMINISTRATION

Aldama, Jamie ....................................Facilities Director

Brennan, Kyran ....................................Police Commander

Calderon, Iris ....................................ACE Coordinator

Candelario, Jose .................................Associate Vice President  
Information Technology

Class, Israel .....................................Information Technology Director

Dallago, Manny .................................Veteran Services Manager

Diaz, Olga ..........................................Title V Director

Fok, Kristie .........................................Enrollment Services Director

Gusser, Kristin ....................................External Affairs Director

Hernandez, Cathleen ............................Associate Vice President  
Institutional Effectiveness

Johnson, Daniel .................................Curriculum & Scheduling Supervisor

Kusek, Thomas ..................................Disability Resources & Services Manager

Lambakis, Christine ............................Marketing, PR and Sales Director

Lopez, Anna .................................Program Director  
Business, Industry & Apprenticeship

Moore, James ..................................Associate Vice President  
Administrative Services

Olson, Kyoko ....................................Instructional Services Manager

Palacio, Jessie .................................Student Life & Leadership Director

Ratliff, Jeanne .................................Partnership & Community Development Director

Ringle, Suzanne ..................................Student Financial Services Director

Roybal, Juliane .................................Employee Development and CTL Director

Saenz, Ruben ....................................Student Services Director

Sanderson, Kerry .........................Career Services and Advising Director

Schumann, Tom ..................................Executive Director  
Center for Entrepreneurial Innovation

Soto, Cecilia ......................................Fiscal Director

GATEWAY EARLY COLLEGE HIGH SCHOOL

Smith, Lisa .......................................Principal

Boyd, Stacey .................................Assistant Principal

Carroll, Teri ..................................Social Worker

Frump, Jon ......................................Counselor

Guilien, Blas ......................................Success Liaison

Banks, Ashley .................................Faculty

Blake, Ashley ..................................Faculty

Blevins, Eric ..................................Faculty

Bracamontes, Maria ............................Faculty

Bronson, Sienna ................................Faculty

Carson, Richard ...............................Faculty

Fair, Darnetta ..................................Faculty

Hawkes, Karen ..................................Faculty

Klein, Christopher ............................Faculty

Lorden, Johndyn ..................................Faculty

McFeely, Andrea ................................Faculty

Montalto, Salvatore ............................Faculty

Montanaro, Blaine ................................Faculty

Moore, Lynette ..................................Faculty

Saunders, Kanisha ..............................Faculty

Vandenhm, DeAnna ............................Faculty

Wiersum, Roger ..................................Faculty

Wiersum, Roger ..................................Faculty
Administration and Faculty

Salazar, Andrew..............................................Trades & Technology
Meat Cutting Instructor; Meat Cutting Apprentice
Certificate, Maricopa Skill Center

Niederwieser, Crissy..............................................Beauty & Wellness
Licensed Cosmetology Instructor

Nutter, Monica..............................................Beauty & Wellness
Licensed Cosmetology Instructor

Perez-Arreaga, Joanne..............................................Beauty & Wellness
Licensed Cosmetology Instructor

Lederman, Rochelle (Shelley).................................Beauty & Wellness
Licensed Cosmetology Instructor

Little, Kelly......................................................Beauty & Wellness
Licensed Cosmetology Instructor

Lizarraga, Kassandra..............................................Healthcare
Pharmacy Technician Instructor; C.Ph.T., B.S., Arizona
State University, M.S. Grand Canyon University

Loza, Michael......................................................Trades & Technology
Computer Instructor; Computer Support Specialist
Certificate, Maricopa Skill Center

Macey, Paige......................................................Beauty & Wellness
Licensed Cosmetology Instructor

Mendoza, Katy......................................................Beauty & Wellness
Essential Skills Program Manager

Peebles, Regina..............................................Beauty & Wellness
Essential Skills Program Manager; B.S., Arizona State University

Moreno, Hector......................................................Healthcare
Spanish Medical Interpreter Instructor; C.H.I. Certified
Healthcare Interpreter

Niezwaag, Crissy..............................................Beauty & Wellness
Aesthetics Instructor; Licensed Cosmetology Instructor

Valdivia, Vikian......................................................Healthcare
Medical Assistant Instructor; A.O.S., The Bryman School;
R.M.A., B.P.T., A.H.I., American Medical Technologists;
C.M.A. American Association of Medical Assistants

Peebles, Regina......................................................Beauty & Wellness
Essential Skills Program Manager

Perez-Arreaga, Joanne..............................................Beauty & Wellness
Computer Foundations Instructor; IC3 - Internet Core
Certification; M.C.T. - Microsoft Certified Trainer;
M.G.S. - Microsoft Office Specialist

Pritchett, Kassandra..............................................Healthcare
Emergency Medical Technology Instructor; A.Z.D.H.S.
Certified Paramedic; A.H.A. Instructor, B.L.S.;
N.A.E.M.S.E. Instructor; A.C.L.S.; P.A.L.S.
Rodriguez, Maria (Mary)..............................................Beauty & Wellness
Licensed Cosmetology Instructor

Valdivia, Vikian..............................................Beauty & Wellness
Medical Assistant Instructor; A.O.S., The Bryman School;
R.M.A., B.P.T., A.H.I., American Medical Technologists;
C.M.A. American Association of Medical Assistants

Woolf, R. Mark..............................................Trades & Technology
Program Director; OSHA Certified Trainer; N.C.C.E.R.; Craft Instructor

Ybarra, Mark Anthony..............................................Beauty & Wellness
Massage Therapy Instructor; Licensed Massage Therapist

Yohe, Christina..............................................Beauty & Wellness
Licensed Cosmetology Instructor

Zamora, Andrew..............................................Trades & Technology
Meat Cutting Instructor; Meat Cutting Apprentice
Certificate, Maricopa Skill Center

Smith, James..............................................Trades & Technology
CNC Machining Instructor; N.I.M.S. Machining Level 1

Stovall, Susan..............................................Healthcare
Medical Billing and Coding Instructor; A.A.S., Arizona
Institute of Business and Technology; C.D.C. Certification,
A.A.P.C., Medical Coding; C.P.C. Certification

Swan, Jennifer..............................................Beauty & Wellness
Licensed Aesthetics Instructor; Licensed Cosmetology Instructor

Tapscott, Michael..............................................Beauty & Wellness
Massage Therapy Instructor; Licensed Massage Therapist

Thompson, Bruce..............................................Trades & Technology
Computer Foundations Instructor; IC3 - Internet Core
Certification; M.O.S. - Microsoft Office Specialist;
B.A., Tufts University

Trotti, Toni..............................................Beauty & Wellness
Licensed Cosmetology Instructor

Ybarra, Mark Anthony..............................................Beauty & Wellness
Massage Therapy Instructor; Licensed Massage Therapist

Yohe, Christina..............................................Healthcare
E.M.S. & Fire Academy Instructor; B.S., University of
Arizona; Firefighter I & II; Fire Instructor I; Hazmat
Technician; Fire Inspector I; N.R.E.M.T. Paramedic;
A.Z.D.H.S. Certified Emergency Paramedic; A.S.H.I B.L.S.
Instructor

GATEWAY ADMINISTRATION

Aldama, Jamie..............................................Facilities Director

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Dallago, Manny..............................................Veteran Services Manager

Diaz, Olga..............................................Title V Director

Dok, Kristie..............................................Enrollment Services Director

Gubser, Kristin..............................................External Affairs Director

Hernandez, Cathleen..............................................Associate Vice President

Johnson, Daniel..............................................Curriculum & Scheduling Supervisor

Kusek, Thomas..............................................Disability Resources

Lambakis, Christine..............................................Marketing, PR and Sales Director

Lopez, Anna..............................................Program Director

Moore, James..............................................Associate Vice President

Olson, Kyoko..............................................Institutional Development Director

Palacio, Jessie..............................................Student Life & Leadership Director

Ratiliff, Jeanne..............................................Partnership & Community

Ringle, Suzanne..............................................Student Financial Services Director

Roybal, Juliane..............................................Employee Development and CTL Director

Saenz, Ruben..............................................Student Services Director

Sanderson, Kerry..............................................Career Services and

Schumann, Tom..............................................Executive Director

Center for Entrepreneurial Innovation

Soto, Cecilia..............................................Fiscal Director

GATEWAY EARLY COLLEGE HIGH SCHOOL

Smith, Lisa..............................................Principal

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Guilien, Blas..............................................Success Liaison

Banks, Ashley..............................................Faculty

Blake, Ashley..............................................Faculty

Blevins, Eric..............................................Faculty

Bracamontes, Maria..............................................Faculty

Bronson, Sienna..............................................Faculty

Carson, Richard..............................................Faculty

Fair, Darnetta..............................................Faculty

Hawkes, Karen..............................................Faculty

Klein, Christopher..............................................Faculty

Lorden, Johrdyn..............................................Faculty

McFrey, Andrea..............................................Faculty

Montalto, Salvatore..............................................Faculty

Montana, Blaine..............................................Faculty

Moore, Lynette..............................................Faculty

Saunders, Kanisha..............................................Faculty

Vandenhau, DeAnna..............................................Faculty

Wiersum, Roger..............................................Faculty

EARLY COLLEGE HIGH SCHOOL

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MAKERSPACE

VISITOR MAP

NORTH 6TH AVENUE
PHOENIX, AZ 85003
(602) 392-5000
ABOUT GATEWAY COMMUNITY COLLEGE

As one of the Maricopa Community Colleges, GateWay Community College is a fully accredited public institution of higher education emphasizing academic, occupational/professional education and trade and technical training programs. GateWay offers clock and credit hour programs in more than 150 degree, certificate and workforce training options in the following areas: Apprenticeships & Construction Trades, Automotive Technology/Auto Body, Beauty & Wellness, Business, Environment, Healthcare, Industrial Technology, Information Technology, Liberal Arts, Math and Science, Meat Cutting, Nursing, Precision Machining and Welding. We have emerged as a leading institution in meeting the needs of business and industry. GateWay is also home to GateWay Early College High School, which provides students with the opportunity to earn a high school diploma and an associate degree, enough college credits to enter a four year university as a junior, or a certificate of completion in an occupational area.

ABOUT MARICOPA COUNTY COMMUNITY COLLEGE DISTRICT

The Maricopa County Community College District (MCCCD) consists of 10 nationally accredited community colleges, two skill centers and multiple education centers. The District ranks as the one of the nation’s largest providers of higher education and is the largest single provider of higher education in Arizona. MCCCD is the largest provider of healthcare workers and job training in the state, educating and training more than 200,000 students year-round.

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