ADDITIONS

New Courses

AIT270 Robotics I
3 Credits (2 Lectures, 3 Labs)
Continuation of AIT 270. Fundamental principles of working safely with robots; robot auxiliary, subsystems, and components. Also includes robot maintenance, troubleshooting, repair, and a basic robot design project. Prerequisite: AIT105.

AIT275 Robotics II
3 Credits (2 Lectures, 3 Labs)
Fundamental principles of working safely with robots, and applications of and trends in industrial robotics. Includes types of robots, axes and coordinate systems, programming and operating robots. Also includes end effectors and collaborative robots. Prerequisite: AIT270.

ELC225 Electrical Level 3 Apprenticeship 3B
5 Credits (3 Lectures, 6 Labs)
This course meets and/or exceeds Arizona Department of Labor Apprenticeship standards and requirements. Post-employment training for commercial electricians. National Center of Construction Education & Research (NCCER) certification is offered and comprehensive electrical curriculum that complies with Department of Labor (DOL) time-based standards for apprenticeship. Prerequisites: ELC212 and must be a Registered Apprentice.

NUR130 LPN to RN Bridge Course
5 Credits (2 Lectures, 9 Labs)
The LPN to RN bridge course allows an LPN to bridge their previous education and experience to the accredited RN curriculum. Included in this course are dosages and calculations; assessment; IV concepts and skills, pharmacology, and concepts related to the transition to Professional RN licensure exam. Prerequisites: LPN license in good standing, Successful Completion of HESI LPN Exam, ENG101, ENG102, PSY101, MAT141, NUR126. Student must submit accredited LPN curriculum and transcript from previous program/institution of study.

WLD 290 Precision Rotary, Micro Welding, and Joining
6 Credits (3 Lectures, 9 Labs)
This course focuses on precision welding and covers some aspects of brazing and solder joining. The Gas Tungsten Arc Welding (GTAW) welding process is used on a CNC controlled welding lathe, and for tube to tube welding for sanitary piping. The precision micro-welding systems include welding or fabricating small parts with GTAW, and laser and resistance welding on small parts. All welding processes are conducted by using pull-down computer control menus allowing the student to find, use, edit, and program special procedures. There will also be assignments on hard and soft torch soldering training detailing when and where each is to be used. The student shall be given the requisite safety training, and operational training on these welding systems. Prerequisites: Welding Technology AAS degree or passing score on Threshold Skill Test.

WLD 291 Rotary Pipe, Track and Robotic Arc Welding
6 Credits (3 Lectures, 9 Labs)
This course focuses on training the student in the skills and activities needed to set-up and weld 12-inch pipe using Gas Metal Arc Welding (GMAW) using a pendant control. The course teaches the care and feeding of using various mechanized systems. The student will also learn to perform the destructive analysis to generate a finished PQR or WPS qualification document on the three mechanical processes. The student shall be given the requisite safety training, and operational training on the mechanical systems. The course also includes a suite of lectures, STEM based object lessons and with the typical set of quizzes, hand-outs, and assignments. Prerequisites: Welding Technology AAS degree or passing score on Threshold Skill Test.

WLD 292 Codes, Data Acq. QC/QA, Metals, and Minerals
4 Credits (2 Lectures, 6 Labs)
This course teaches students how to use laboratory tools to perform inspection and the destructive extraction of weld qualification coupons from welds and weld parameters. Also, to deploy a variety of welding codes and industrial specifications to define the correct gases, fluxes, filler metals for base metals, and lists of the composition of alloys and mechanical properties of materials. Additionally, students will capture the real-time welding data or parameters, and analyze the data related to quality and whether the WPS was followed. Students will also link to multiple welding systems through technology to concurrently and remotely monitor and compare welding to established welding procedures. Also covered: preventative or corrective maintenance and servicing of facility equipment; personnel and supervision management; production scheduling; project management; fabrication facility economics; workforce insights relating to ethics, substance abuse, money management, retirement, and sexual harassment in the work place; introduction to professional welding groups, STEM workshops for youth, and establishing a social media presence. A major output of this course centers on the student developing a YouTube type video of them performing one of the STEM object lessons or demonstrating one of the welding or joining processes. Prerequisite: Welding Technology AAS degree or passing score on Threshold Skill Test.
NEW CERTIFICATES AND DEGREES

ADVANCED JOINING AND FABRICATION TECHNICIAN TRAINING PROGRAM CERTIFICATE
Total Credits: 16
The Advanced Joining and Fabrication Technician Training Program prepares welders with an overview of advanced technology such as industrial codes, data acquisition, Quality Control, Quality Assurance, Metallurgy and Materials. Embedded in the program is the application of concepts to rotary pipe, track, and robotic arc welding and the attainment of precision and micro welding skills. Courses include use of data and math to plan, design and apply lessons learned.

Prerequisite
Welding Technology AAS degree or passing score on Threshold Skill Test.

Core Requirements (16)
WLD290 Precision Rotary, Micro Welding, & Joining (6)
WLD291 Rotary Pipe, Track and Robotic Arc Welding (6)
WLD292 Codes, Data Acq., QC/QA, Metals & Materials (4)

Other Requirements
Students must earn:
- a cumulative grade point average (CGPA) of at least a 2.0 on a 4.0 scale;
- a minimum of 3 earned CAC credits numbered 100 or above;
- a minimum of 16 semester credits.

CORRECTIONS COURSES

HEO122 Heavy Equipment Operations I (p 193)
5 Credits (5 Lectures, 6 Labs)
Expanded operation of heavy equipment to include interpreting blueprints, staking, and estimating costs, using technology to conduct research, and constructing more complex projects. Prerequisite: Valid driver's license.
Removed Prerequisite of HEO121

MAT097 Foundations II (p 201)
5 Credits (5 Lectures), effective Spring 2021
Development of fundamental mathematical skills and concepts such as operations/properties of exponents and complex numbers; factoring; graphing functions; solution/application of linear, quadratic, and rational equations; operations on rational and radical expressions. Credit is allowed for only MAT097 or MAT121.

CERTIFICATES AND DEGREES

AGRICULTURE BUSINESS AAS (p 82)
- Total Credits: 62-63, not 63
- General Education Requirements: 26-27, not 27
- Physical and Biological Sciences statement should read: AGS101, not 100
- Other Requirements
  - a minimum of 62 semester credits

AUTOMATED INDUSTRIAL TECHNOLOGY II CERTIFICATE (p 106)
Core Requirements (16)
AIT205 Electronic Control Systems I (3)
AIT210 Electronic Control Systems II (3)
AIT215 Process Control Systems (4)
AIT225 Electrical Systems II (3)

AUTOMATED INDUSTRIAL TECHNOLOGY AAS (p 106)
- Mathematics (3-4)
  - MAT106 Technical Math I (3) or higher
- Core Requirements (41)
  - AIT100 NIMS Industrial Safety (1)
  - AIT105 Maintenance Operations (3)
  - AIT110 Mechanical Systems (3)
  - AIT115 Hydraulic Systems (3)
  - AIT120 Pneumatic Systems (3)
  - AIT125 Electrical Systems I (3)
  - AIT205 Electronic Control Systems I (3)
  - AIT210 Electronic Control Systems II (3)
  - AIT215 Process Control Systems (4)
  - AIT225 Electrical Systems II (3)
AIT270 Robotics I (3) (Replaces AIT130)
AIT275 Robotics II (3) (New core requirement)
MET289 Advanced Technology Capstone (3) (Core instead of Elective)

WLD221 Gas Tungsten Arc Welding (3)
OR
Any 3-credit WLD course (Core Requirement instead of Elective)

• Core Electives have been removed

DIESEL TECHNOLOGY CERTIFICATE II
(p 108)

Other Requirements
• a minimum of 46 credits

DIETARY MANAGER TRAINING CERTIFICATE
Previously: Certified Dietary Manager,
Certified Food Protection Professional Certificate
(p 127)

• Total Credits: 11, not 7
• Core Requirements: (11), not (7)
  NTR104 Nutrition (3) added
  NTR105 ServSafe Preparation (1)
  No certification, preparation only
  NTR223 Food Service Management (3)
  NTR240 Clinical Nutrition (3)
  NTR255 Medical Terminology, Labs & Food Drug Interaction (1) added

LIVE AUDIO AND LIGHTING CERTIFICATE
(p 140)

Core Requirements
• Replace EIT221 with EIT151 Digital Audio Workstation

PIPEFITTING/PIPE WELDING TECHNOLOGY AAS
(p 112)

Oral Communications (3)
Select one:
• COM259 Professional Communication (3) (recommended)
• Any COM course numbered 100 or above

RECORDING ENGINEERING AAS
(p 143)

Core Requirements (42)

SOFTWARE DEVELOPMENT AAS
(P 99)

• Total Credits: 60-62, not 61-63
• Core and Elective Requirements
  o Total (38-39), not (30-40)
  o CIS176 Python Programming (3), not (4)