

MECHATRONICS (AAS)

Degree: Associate of Applied Science

Major: Mechatronics

Major Code: 1398

About This Major . . .

The Mechatronics program responds to a new and emerging career that trains technicians with “multi-craft” skills to work on robotic and “intelligent” equipment ranging from ATM machines to multi-million-dollar manufacturing cells. The skills taught include electrical, mechanical, and computer technologies. Mechatronics technicians will assist the design, development and engineering staff, and install, maintain, modify and repair mechatronic systems, equipment and component parts. The program combines academic training with hands-on activities.

For more information on what you can do with this major, visit WCCC’s [Programs of Study](#) page.

All CMU/WCCC associate graduates are expected to demonstrate proficiency in specialized knowledge/applied learning, quantitative fluency, communication fluency, critical thinking, personal and social responsibility, and information literacy. In addition to these campus-wide student learning outcomes, graduates of this major will be able to:

- Demonstrate communication skills to include listening, speaking, writing and electronic formats. (Communication Fluency)
- Demonstrate ethical, civic, and work place responsibility as part of professional behavior. (Specialized Knowledge)
- Analyze and implement systems containing hardware and software components. (Specialized Knowledge)
- Demonstrate safe work habits in performance of tasks. (Applied Learning)
- Demonstrate basic troubleshooting skill sets and repair skill sets to fulfill the needs of entry-level employment. (Critical Thinking)

Requirements

Each section below contains details about the requirements for this program. Select a header to expand the information/requirements for that particular section of the program’s requirements.

To print or save an overview of this program’s information, including the program description, learning outcomes, requirements, suggested course sequencing (if applicable), and advising and graduation information, scroll to the bottom of the left-hand navigation menu and select “Print Options.” This will give you the options to either “Send Page to Printer” or “Download PDF of This Page.” The “Download PDF of This Page” option prepares a much more concise presentation of all program information. The PDF is also printable and may be preferable due to its brevity.

Institutional Degree Requirements

The following institutional degree requirements apply to all CMU and WCCC Associate of Applied Science (AAS) degrees. Specific programs may have different requirements that must be met in addition to institutional requirements.

- 60 semester hours minimum.
- Students must complete a minimum of 15 of the final 30 semester hours of credit at CMU/WCCC.
- 2.00 cumulative GPA or higher in all CMU/WCCC coursework.

- A course may only be used to fulfill one requirement for each degree/certificate.
- No more than six semester hours of independent study courses can be used toward the degree.
- Non-traditional credit, such as advanced placement, credit by examination, credit for prior learning, cooperative education and internships, cannot exceed 20 semester credit hours for an AAS degree.
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- Capstone exit assessment/projects (e.g., Major Field Achievement Test) requirements are identified under Program-Specific Degree Requirements.
- The Catalog Year determines which program sheet and degree requirements a student must fulfill in order to graduate. Visit with your advisor or academic department to determine which catalog year and program requirements you should follow.
- See “Requirements for Undergraduate Degrees and Certificates” in the catalog for a complete list of graduation requirements.

Specific to this degree:

- A minimum of 60 semester credit hours is required for the AAS in Mechatronics.

Essential Learning Requirements

(15 semester hours)

See the current catalog for a list of courses that fulfill the requirements below. If a course is an Essential Learning option and a requirement for your major, you must use it to fulfill the major requirement and make a different selection for the Essential Learning requirement.

Code	Title	Semester Credit Hours
Communication		
ENGL 111	English Composition I-GTC01	3
Select one of the following courses:		
ENGL 112	English Composition II-GTC02	3
SPCH 101	Interpersonal Communications	
SPCH 102	Speechmaking	
Mathematics		
MATH 108	Technical Mathematics (or higher) ¹	3
Other Essential Learning Core Courses		
Select one Social and Behavioral Sciences, History, Natural Sciences, Fine Arts or Humanities course		3
Select one Social and Behavioral Sciences, History, Natural Sciences, Fine Arts or Humanities course		3
Total Semester Credit Hours		15

¹ MATH 108 is a 4 semester credit hour course; however, if a student completes a higher-level, Essential Learning eligible MATH course at 3 semester credit hours, that course would fulfill the Mathematics Essential Learning requirement. If MATH 108 is completed, the extra one hour will count as a general elective hour.

Other Lower Division Requirements

Code	Title	Semester Credit Hours
Wellness Requirement		
KINE 100	Health and Wellness	1
KINA 1XX	Activity Course	1
Total Semester Credit Hours		2

Program Specific Degree Requirements

(43 semester hours, must earn a grade of "C" or better in each course)

Code	Title	Semester Credit Hours
CSCI 110	Beginning Programming	3
ELCE 120	Commercial Wiring	4
ELCE 124	Electrical Safety	1
ELCE 150	DC Circuit Fundamentals	4
ELCE 155	AC Circuit Fundamentals	4
ELCE 220	Industrial Controls	4
ELCE 222	Instrumentation and Process	4
ELCE 225	Introduction to PLCs	4
ELCE 229	AC/DC Variable Speed Drive	2
ELCE 263	Specific Wiring for Structured Cabling Systems	2
MAMT 115	Introduction to Machine Shop	3
MAMT 145	Machine Maintenance	2
TECI 142	Internet of Things	3
TSTG 150	Introduction to Fluid Power	3
Total Semester Credit Hours		43

Suggested Course Plan

Due to a potential variation in semester credit hours for the Essential Learning Mathematics credits, the following sequencing results in variable credit hours; however, students in this major must complete a minimum of 60 semester credit hours, including satisfactory completion of all required courses, for satisfactory completion of degree.

First Year		Semester Credit Hours
Fall Semester		
ELCE 124	Electrical Safety	1
ELCE 150	DC Circuit Fundamentals	4
ELCE 225	Introduction to PLCs	4
MAMT 115	Introduction to Machine Shop	3
MATH 108	Technical Mathematics (or higher) ¹	3-4
Semester Credit Hours		15-16
Spring Semester		
CSCI 110	Beginning Programming	3
ELCE 120	Commercial Wiring	4
ELCE 155	AC Circuit Fundamentals	4
MAMT 145	Machine Maintenance	2
KINE 100	Health and Wellness	1
KINA Activity		1
Semester Credit Hours		15

Second Year

Fall Semester

ELCE 222	Instrumentation and Process	4
ELCE 263	Specific Wiring for Structured Cabling Systems	2
TECI 142	Internet of Things	3
ENGL 111	English Composition I-GTCO1	3
Essential Learning Social and Behavioral Sciences, History, Natural Sciences, Fine Arts or Humanities course		3
Semester Credit Hours		15

Spring Semester

ELCE 220	Industrial Controls	4
ELCE 229	AC/DC Variable Speed Drive	2
TSTG 150	Introduction to Fluid Power	3
Select one of the following:		3
ENGL 112	English Composition II-GTCO2	
SPCH 101	Interpersonal Communications	
SPCH 102	Speechmaking	
Essential Learning Social and Behavioral Sciences, History, Natural Sciences, Fine Arts or Humanities course		3
Semester Credit Hours		15
Total Semester Credit Hours		60-61

¹ MATH 108 is a 4 semester credit hour course; however, if a student completes a higher-level, Essential Learning eligible MATH course at 3 semester credit hours, that course will fulfill the Mathematics Essential Learning requirement.

Advising and Graduation

Advising Process and DegreeWorks

Documentation on the pages related to this program is intended for informational purposes to help determine what courses and associated requirements are needed to earn a degree. The suggested course sequencing outlines how students could finish degree requirements. Some courses are critical to complete in specific semesters, while others may be moved around. Meeting with an academic advisor is essential in planning courses and altering the suggested course sequencing. It is ultimately the student's responsibility to understand and fulfill the requirements for her/his intended degree(s).

DegreeWorks is an online degree audit tool available in MAVzone. It is the official record used by the Registrar's Office to evaluate progress towards a degree and determine eligibility for graduation. Students are responsible for reviewing their DegreeWorks audit on a regular basis and should discuss questions or concerns with their advisor or academic department head. Discrepancies in requirements should be reported to the Registrar's Office.

Graduation Process

Students must complete the following in the first two months of the semester prior to completing their degree requirements:

- Review their DegreeWorks audit and create a plan that outlines how unmet requirements will be met in the final semester.
- Meet with their advisor and modify their plan as needed. The advisor must approve the final plan.
- Submit the "Intent to Graduate" form to the Registrar's Office to officially declare the intended graduation date and commencement ceremony plans.

- Register for all needed courses and complete all requirements for each degree sought.

Submission deadlines and commencement details can be found at <http://www.coloradomesa.edu/registrar/graduation.html>.

If a student's petition for graduation is denied, it will be her/his responsibility to consult the Registrar's Office regarding next steps.