



## 2017-2018 PROGRAM REQUIREMENTS

**Degree: Associate of Applied Science**  
**Major: Manufacturing Technology**  
**Emphasis: Machining Technology**

### **About This Major . . .**

The Associate of Applied Science with the Manufacturing Technology major offers classroom instruction and related lab work with hands-on activities in the use of tools and the operation of equipment found in manufacturing. In the Machining Technology emphasis students learn to apply industrial knowledge and skills to plan and implement designs, operate manual mills and lathes, operate computer-aided machinery with CAD/CAM software, and computer-numerical controlled (CNC) machines. Students also develop the skills that enable them to read blueprints, apply appropriate mathematical concepts, and understand the properties of metal and polymers. This course of study is designed to meet competency-based standards set by the manufacturing industry. With this degree, students will be qualified for the following employment opportunities: entry-level machinist, computer-numerical control operator, numerical tool and process technician, manufacturing engineering technician, and manufacturing inspection technician.

For more information on what you can do with this major, go to <http://www.coloradomesa.edu/wccc/programs.html>

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

1. Use written and oral communication skills needed for entry level employment in the manufacturing industry. (Communication Fluency)
2. Apply mathematical concepts to perform machining tasks. (Quantitative Fluency)
3. Distinguish between tolerances and dimensions, as used in the machining industry. (Critical Thinking)
4. Summarize business practices, principles and application of associated technical skill in the machining in industry. (Specialized Knowledge)
5. Apply the necessary machining skill sets to perform specified manufacturing processes. (Applied Learning)
6. Determine ethical and civil responsibility necessary for employees in the machining industry. (Specialized Knowledge)

### **Advising Process and DegreeWorks**

This document 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.

## **INSTITUTIONAL DEGREE REQUIREMENTS**

The following institutional degree requirements apply to all CMU/WCCC 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.

## **PROGRAM-SPECIFIC DEGREE REQUIREMENTS**

- 61 semester hours total for the AAS, Manufacturing Technology - Machining Technology.
- A "C" or better must be achieved in coursework toward major content area.

## **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.

### **Communication** (6 semester hours)

- ENGL 111 - English Composition (3)
- Select one of the following courses:
  - ENGL 112 - English Composition (3)
  - SPCH 101 - Interpersonal Communication (3)
  - SPCH 102 - Speechmaking (3)

### **Mathematics** (3 semester hours)

- MATH 107 - Career Math (3) or higher

### **Other Essential Learning Core Courses** (6 semester hours)

- 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)

## **OTHER LOWER-DIVISION REQUIREMENTS**

### **Wellness Requirement** (2 semester hours)

- KINE 100 - Health and Wellness (1)
- Select one Activity course (1)

**AAS: MANUFACTURING TECHNOLOGY - MACHINING TECHNOLOGY REQUIREMENTS** (44 semester hours)

- One of the following courses:
  - ENGR 125 - Computer-Aided Design & Fabrication (3)
  - CADT 109 - CAD- Mechanical Advanced (3)
- MAMT 101 - Introduction to Manufacturing (2)
- MAMT 105 - Print Reading and Sketching (2)
- MAMT 106 - Geometric Tolerancing (2)
- MAMT 115 - Introduction to Machine Shop (3)
- MAMT 120 - Machine Technology I (4)
- MAMT 125 - Machine Technology II (4)
- MAMT 230 - Machine Technology III (4)
- One of the following courses:
  - MAMT 240 - Job Shop Machining II (3)
  - MAMT 170 - Practical Applications (3)
- MAMT 148 - CNC Applications (3)
- MAMT 251 - CNC Machining I (3)
- MAMT 255 - CNC Machining II (3)
- MAMT 260 - Properties of Materials (3)
- MAMT 207 - Introduction to Statistical Process Control (2)
- One of the following restricted electives:
  - WELD 151 - Introduction to Welding (3)
  - TSTG 220 - Workplace Skills (3)
  - CADT 108 - CAD-Mechanical (3)

## SUGGESTED COURSE SEQUENCING

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### **Freshman Year, Fall Semester: 18 credits**

- MAMT 105 - Print Reading and Sketching (2)
- MAMT 106 - Geometric Tolerance (2)
- MAMT 115 - Introduction to Machine Shop (3)
- MAMT 120 - Machine Technology I (4)
- MAMT 125 - Machine Technology II (4)
- MAMT 148 - CNC Applications (3)

### **Freshman Year, Spring Semester: 16 credits**

- MATH 107 - Career Math (3)
  - MAMT 230 - Machine Technology III (4)
  - MAMT 251 - CNC Machining I (3)
  - MAMT 255 - CNC Machining II (3)
  - MAMT 240 - Job Shop Machining II (3) or MAMT 170 - Practical Application (3)
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### **Sophomore Year, Fall Semester: 14 credits**

- ENGL 111 - English Composition (3)
- Essential Learning Social Science, Natural Science, Fine Arts, or Humanities (3)
- Essential Learning Social Science, Natural Science, Fine Arts, or Humanities (3)
- KINE 100 - Health and Wellness (1)
- MAMT 101 - Introduction to Manufacturing (2)
- MAMT 207 - Introduction to Statistical Process Control (2)

### **Sophomore Year, Spring Semester: 13 credits**

- ENGR 125 - Computer-aided Drafting & Fabrication (3) or CADT 109 - CAD - Mechanical Advanced (3)
  - ENGL 112 - English Composition (3) or SPCH 101 - Interpersonal Communication (3) or SPCH 102 - Speechmaking (3)
  - MAMT 260 - Properties of Materials (3)
  - KINA 1XX - Activity (1)
  - Restricted Elective (3)
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