About This Emphasis . . .
Through the use of freehand sketching and Computer Aided Drafting (CAD), the student will learn the techniques of basic drafting principles and methods used in today’s engineering fields. Drafting concepts and the processes of orthographic projection, pictorial drawing, dimensioning, and geometric construction will be explored by hand and with CAD software and equipment. The majority of the student’s work will be completed on the computer. A project in the area of the student’s interest will tie the course to real world concepts.

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. Apply principles of grammar and vocabulary in the documentation required to perform the duties of a CAD technician (interviewing clients and communicating with constituents. (Communication Fluency)
2. Apply mathematical concepts and practices that are required to properly perform calculation for design. (Quantitative Fluency)
3. Interview clients, to help decide on materials, size and design, based on client’s needs and students’ knowledge of the industry.
4. Demonstrate mastery of terminology in the Engineering, Architectural, Civil and Technical drafting industry. (Specialized Knowledge)
5. Generate substantially error-free plans that define the duties of a CAD technician. Produce industry standard drawings in various platforms (engineering, Architectural, Civil and Technical). (Applied Learning)
6. Demonstrate personal and professional ethical behavior as applied to the Computer Aided Design industry. (Specialized Knowledge)
DEGREE REQUIREMENTS:
- 71 semester hours total (A minimum of 16 taken at CMU in no fewer than two semesters).
- 2.00 cumulative GPA or higher in all CMU coursework and a “C” or better must be achieved in coursework toward major content area.
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- A student must follow the CMU graduation requirements either from 1) the program sheet for the major in effect at the time the student officially declares the major; or 2) a program sheet for the major approved for a year subsequent to the year during which the student officially declares the major and is approved for the student by the department head. Because a program may have requirements specific to the degree, the student should check with the faculty advisor for additional criteria. It is the student’s responsibility to be aware of, and follow, all requirements for the degree being pursued. Any exceptions or substitutions must be approved by the student’s faculty advisor and Department Head.
- When filling out the program sheet a course can be used only once.
- See the “Undergraduate Graduation Requirements” in the catalog for additional graduation information.

ESSENTIAL LEARNING REQUIREMENTS (Minimum 15 semester Hours) See the current catalog for a list of courses that fulfill the requirements below. If a course is on the Essential Learning list of options and a requirement for your major, you must use it to fulfill the major requirement and make a different selection within the Essential Learning requirement. The Essential Learning capstone course and co-requisite Essential Speech course (required for bachelor’s degrees) cannot be used as options for the below requirements.

<table>
<thead>
<tr>
<th>Course No</th>
<th>Title</th>
<th>Sem.hrs</th>
<th>Grade</th>
<th>Term/Trns</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 111</td>
<td>English Composition</td>
<td>3</td>
<td></td>
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<tr>
<td>OR</td>
<td>ENGL 111 English Composition and SPCH 101 Interpersonal Communication or SPCH 102 Speechmaking</td>
<td>3</td>
<td></td>
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<td>ENGL 111 English Composition and SPCH 101 Interpersonal Communication or SPCH 102 Speechmaking</td>
<td>3</td>
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Mathematics Minimum Math 107 Career Mathematics (Minimum 3 semester hours)
- MATH 113 College Algebra** 4*

*3 credits apply to the Essential Learning requirements and 1 credit applies to elective credit.

Social Sciences, Natural Science, Fine Arts or Humanities (Minimum 6 semester hours)
- 3
- 3

**Required for this degree.
***Please see your advisor for requirements specific to this program.

ASSOCIATE OF APPLIED SCIENCE: MANUFACTURING TECHNOLOGY COURSE REQUIREMENTS (54 semester hours)

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>KINE 100</td>
<td>Health and Wellness</td>
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<tr>
<td>KINA 1</td>
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WELLNESS REQUIREMENT (2 semester hours)

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<th>Grade</th>
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</tbody>
</table>

ASSOCIATE OF APPLIED SCIENCE: MANUFACTURING TECHNOLOGY COURSE REQUIREMENTS (54 semester hours)

Core Classes
- CADT 101 Introduction to Computers 1
- CONC 104 Architectural/Civil Print Reading 2
- CADT 106 Computer Aided Design 3
- CADT 107 Advanced Computer Aided Design 3
- CADT 108 CAD – Mechanical 3
- CADT 109 CAD – Mechanical Advanced 3
- CADT 110 CAD Application 4
- CADT 210 Project 3
- CADT 130 CAD – Civil 3
- CADT 135 CAD – Civil II 3
- CADT 140 CAD – Architectural Theory 2
- CADT 141 Structural Materials 3
- CADT 142 CAD – Residential Architecture 3
- CADT 143 CAD – Commercial Architecture 3
- MAMT 101 Introduction to Manufacturing 2
- MAMT 105 Print Reading/Sketching 2
- MAMT 106 Geometric Tolerancing 2
- MAMT 115 Introduction to Machine Shop 3

OR
- WELD 151 Introduction to Welding 3

Electives (6 semester hours—may need advisors approval)
- MATH 113 College Algebra 1
SUGGESTED COURSE SEQUENCING FOR THE
ASSOCIATE OF APPLIED SCIENCE WITH A MAJOR IN
MANUFACTURING TECHNOLOGY, EMPHASIS IN COMPUTER AIDED DESIGN TECHNOLOGY

This is a recommended sequence of course work. Certain courses may have prerequisites or are only offered during the Fall or Spring semesters. It is the student’s responsibility to meet with the assigned advisor and check the 2 year course matrix on the Colorado Mesa website for course availability.

FRESHMAN YEAR

First Semester  Hours  Second Semester  Hours
MATH 113  College Algebra  4  ENGL 111  English Composition  3
CADT 101  Introduction to Computers  1  CADT 107  Advanced Computer Aided Design  3
CONC 104  Architectural/Civil Print Reading  2  CADT 109  CAD – Mechanical Advanced  3
CADT 106  Computer Aided Design  3  MAMT 115  Introduction to Machine Shop or
CADT 108  CAD – Mechanical  3  WELD 151  Introduction to Welding  3
MAMT 101  Introduction to Manufacturing  2  Social Sciences, Natural Science, Fine Arts or Humanities  3
MAMT 105  Print Reading/Sketching  2  Elective (with advisor’s approval)  3
MAMT 106  Geometric Tolerancing  2  18

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SOPHOMORE YEAR

Third Semester  Hours  Fourth Semester  Hours
ENGL 112  or SPCH 101 or SPCH 102  3  CADT 110  CAD Application  4
CADT 140  CAD – Architectural Theory  2  CADT 210  Project  3
CADT 141  Structural Materials  3  CADT 135  CADT Civil II  3
CADT 142  CAD – Residential Architecture  3  CADT 143  CAD Commercial Architecture  3
CADT 130  CAD – Civil  3  Social Sciences, Natural Science, Fine Arts or Humanities  3
Elective (with advisor’s approval)  3  KINA  Activity  1
  17  KINE 100  Health and Wellness  1

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POLICIES:

1. Please see the catalog for a complete list of graduation requirements.
2. This program sheet must be submitted with your graduation planning sheet to your advisor during the semester prior to the semester of graduation, no later than October 1 for spring graduates, no later than March 1 for fall graduates. You must turn in your “Intent to Graduate” form to the Registrar’s Office by September 15 if you plan to graduate the following May, and by February 15 if you plan to graduate the following December.
3. Your advisor will sign and forward the Program Sheet and Graduation Planning Sheet to the Department Head for signature. Finally, the Department Head will submit the signed forms to the Registrar’s Office. (Students cannot handle the forms once the advisor signs.)
4. If your petition for graduation is denied, it will be your responsibility to reapply for graduation in a subsequent semester. Your “Intent to Graduate” does not automatically move to a later graduation date.
5. NOTE: The semester before graduation, you may be required to take a Major Field Achievement Test (exit exam).