



**2014-2015 PETITION/PROGRAM SHEET**  
**Degree: Bachelor of Science**  
**Major: Applied Mechanical Engineering**

**About This Major . . .**

The objective of the Applied Mechanical Engineering Program is to provide the knowledge necessary to apply state-of-the-art techniques to design and build products and systems to meet the current and future needs of society. The Bachelor of Science Degree in Applied Mechanical Engineering is designed for a student who is doer or implementer - one who is able to apply mathematics, the natural and engineering sciences, engineering principles, and current engineering practices to the solution of design problems and to the operation and testing of mechanical systems.

The Applied Mechanical Engineering graduate applies established procedures that use current state-of-the-art techniques to work with mechanical systems. Laboratory courses are an integral component of the Applied Mechanical Engineering program and are designed to develop student competence to apply experimental design methods, as well as provide a “hands-on” approach to designing and building products and systems to meet the current and future needs of society. The employment of AMEs in manufacturing related areas should increase as the demand for improved machinery and machine tools grows and industrial machinery and processes become increasingly complex. Emerging technologies in biotechnology, and nanotechnology will create new job opportunities for AMEs. In addition to job openings from growth, many openings should result from the need to replace workers who leave the labor force. For more information on what you can do with this major, go to <http://www.coloradomesa.edu/career/whatmajor.html>

All CMU baccalaureate 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 the knowledge, techniques, skills, and modern tools of engineering to engineering problems. (Critical Thinking/Applied Learning)
2. Apply knowledge of mathematics, science, and technology to engineering problems. (Quantitative Fluency)
3. Effectively use oral, written, and graphical communication skills to address both technical and non-technical audiences. (Communication Fluency)
4. Apply the ethical standards of the discipline to engineering problems. (Specialized Knowledge)

**NAME:** \_\_\_\_\_ **STUDENT ID #** \_\_\_\_\_

**LOCAL ADDRESS AND PHONE NUMBER:** \_\_\_\_\_  
 \_\_\_\_\_ ( ) \_\_\_\_\_

I, (Signature) \_\_\_\_\_, hereby certify that I have completed (or will complete) all the courses listed on the Program Sheet. I have read and understand the policies listed on the last page of this program sheet. I further certify that the grade listed for those courses is the final course grade received except for the courses in which I am currently enrolled and the courses which I complete next semester. I have indicated the semester in which I will complete these courses.

\_\_\_\_\_  
 Signature of Advisor \_\_\_\_\_ 20\_\_\_\_  
 Date

\_\_\_\_\_  
 Signature of Department Head \_\_\_\_\_ 20\_\_\_\_  
 Date

\_\_\_\_\_  
 Signature of Registrar \_\_\_\_\_ 20\_\_\_\_  
 Date

**Student should work closely with a faculty advisor when selecting and scheduling courses prior to registration.**

**Degree Requirements:**

- 125 semester hours total (Students must complete a minimum of 30 of the last 60 hours of credit at CMU, with at least 15 semester hours in major discipline courses numbered 300 or higher).
- 40 upper division credits (A minimum of 15 taken within the major at CMU)
- 2.00 cumulative GPA or higher in all CMU coursework
- 2.00 cumulative GPA or higher in coursework toward the major content area
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- When filling out the program sheet a course can be used only once.
- 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 a 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.
- See the "Undergraduate Graduation Requirements" in the catalog for additional graduation information.
- A student must receive a "C" or higher in any class that is a pre-requisite for a subsequent class.

**GENERAL EDUCATION REQUIREMENTS** (31 semester hours) See the current catalog for a list of courses that fulfill the requirements below. If a course is on the general education 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 general education requirement.

Course No	Title	Sem.hrs	Grade	Term
<b>English</b> (6 semester hours, must receive a grade of "C" or better and must be completed by the time the student has 60 semester hours.)				
ENGL 111	English Composition	3	_____	_____
ENGL 112	English Composition	3	_____	_____
(ENGL 129, Honors English, may be substituted for ENGL 111 & ENGL 112.)				

**Math:** (3 semester hours, must receive a grade of "C" or better, must be completed by the time the student has 60 semester hours.)

MATH 135	Engineering Calculus I	4*	_____	_____
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\*3 credits apply to the General Ed requirements and 1 credit applies to Foundation Courses

**Humanities** (3 semester hours)

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**Social and Behavioral Sciences** (6 semester hours)

SOCI 120	Technology and Society	3	_____	_____
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Course No	Title	Sem.hrs	Grade	Term/Trns
<b>Natural Sciences</b> (7 semester hours, one course must include a lab)				
PHYS 131	_____	4	_____	_____
PHYS 131L	_____	1	_____	_____
CHEM 131	_____	4*	_____	_____

\*2 credits apply to the General Ed requirements and 2 credits apply to Foundation Courses

**History** (3 semester hours)

HIST	_____	_____	_____	_____
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**Fine Arts** (3 semester hours)

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**OTHER LOWER DIVISION REQUIREMENTS** (6 semester hours)

**Kinesiology** (3 semester hours)

KINE 100	Health and Wellness	1	_____	_____
KINA 1	_____	1	_____	_____
KINA 1	_____	1	_____	_____

**Applied Studies** (3 semester hours)

SPCH 102	Speechmaking	3	_____	_____
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**FOUNDATION COURSES** (12 semester hours) Must complete with a "C" or higher.

CHEM 131	_____	4*	_____	_____
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\*2 credits apply to the General Ed requirements and 2 credits apply to foundation courses

CHEM 131L	_____	1	_____	_____
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MAMT 102	Intro to Machine Shop	1	_____	_____
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MATH 135	Engineering Calculus I	4*	_____	_____
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\*3 credits apply to the General Ed requirements and 1 credit applies to foundation courses

MATH 136	Engineering Calculus II	4	_____	_____
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MAMT 105	Print Reading & Sketching	2	_____	_____
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MAMT 106	Geometrical Dim & Tolerancing I	1	_____	_____
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**APPLIED MECHANICAL ENGINEERING MAJOR REQUIREMENTS** (76 semester hours) **Must** pass all courses with a grade of "C" or higher.

**Basic Engineering Courses** (19 semester hours)

ENGR 101	Introduction to Engineering	1	_____	_____
ENGR 125	CAD and Fabrication	3	_____	_____
ENGR 140	First-Year Engr. Projects	3	_____	_____
ENGR 224	Materials Science	2	_____	_____
ENGR 224L	Materials Science Lab	1	_____	_____
ENGR 225	Intro to Manufacturing	3	_____	_____
ENGR 261	Statics and Structures	3	_____	_____
ENGR 263	Mechanics of Solids	3	_____	_____

**AME Courses** (36 semester hours)

ENGR 305	Engr Econ & Ethics	2	_____	_____
ENGR 312	Engr Thermodynamics	3	_____	_____
ENGR 317	Fund of Cir and Elect	3	_____	_____
ENGR 321	Fluid Mechanics	3	_____	_____
ENGR 325	Component Design	3	_____	_____
ENGR 343	Dynamics	3	_____	_____
ENGR 345	Engr Integration I	3	_____	_____
ENGR 385	Engr Integration II	3	_____	_____
ENGR 410	Professionalism Seminar	1	_____	_____

ENGR 427	Measurements Lab	2	_____	_____
ENGR 435	Industrial Controls	3	_____	_____
ENGR 445	AME Design Proj I	3	_____	_____
ENGR 446	Writing for Design Proj	1	_____	_____
ENGR 485	AME Design Proj II	3	_____	_____

**Other Required Courses** (9 semester hours)

CSCI 130	Intro to Engineering Computing	3	_____	_____
ENGL 425	Scientific Writing	3	_____	_____
STAT 305	Engr Statistics & QC	3	_____	_____

**Applied Mechanical Engineering Options**(12 semester hours, including upper division technical electives as necessary)  
Students complete either the Manufacturing Option or the Energy & Power Option

**Manufacturing Option (12 semester hours)**

ENGR 425	Advanced Manufacturing	3	_____	_____
	Manufacturing Elective	3	_____	_____
	Manufacturing Elective	3	_____	_____
	General Tech Elective	3	_____	_____

**Energy & Power Option (12 semester hours)**

ENGR 336	Heat & Power	3	_____	_____
ENGR 436	Fluid Power Systems	3	_____	_____
ENGR 460	Energy Systems	3	_____	_____
ENGR 465	Electric Power Systems	3	_____	_____

## SUGGESTED COURSE SEQUENCING FOR A MAJOR IN APPLIED MECHANICAL ENGINEERING

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

Fall Semester	Hours	Spring Semester	Hours
ENGR 101	1	MATH 136	4
MATH 135	4	ENGL 112	3
ENGL 111	3	ENGR 140	3
ENGR 125	3	MAMT 102	1
KINE 100	1	PHYS 131	4
MAMT 105	2	PHYS 131L	1
MAMT 106	1		16
	15		

### SOPHOMORE YEAR

Fall Semester	Hours	Spring Semester	Hours
CHEM 131	4	SOCI 120	3
CHEM 131L	1	ENGL 425	3
CSCI 130	3	ENGR 224	2
ENGR 261	3	ENGR 224L	1
KINA 1***	1	ENGR 263	3
SPCH 102	3		3
	15		15

### JUNIOR YEAR

Fall Semester	Hours	Spring Semester	Hours
ENGR 225	3	ENGR 317	3
ENGR 305	2	ENGR 325	3
ENGR 312	3	ENGR 343	3
ENGR 321	3	ENGR 385	3
STAT 305	3	KINA 1**	1
ENGR 345	3		3
	17		16

### SENIOR YEAR

Fall Semester	Hours	Spring Semester	Hours
ENGR 401	1	ENGR 435	3
ENGR 427	2	ENGR 446	1
ENGR 445	3	ENGR 485	3
	3		3
	3		6
	15		16

#### POLICIES:

1. It is your responsibility to determine whether you have met the requirements for your degree. Please see the Catalog for a complete list of graduation requirements.
2. 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. 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.**
4. Your advisor will sign and forward the Program Sheet and Graduation Planning Sheet to the Department Head for signature.
5. Finally, the Department Head or the department administrative assistant will take the signed forms to the Registrar's Office. (Students cannot handle the forms once the advisor signs.)
6. 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.