2015-2016 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.

_____ _____ 20_____
Signature of Advisor Date

_____ _____ 20_____
Signature of Department Head Date

_____ _____ 20_____
Signature of Registrar Date

DEGREE REQUIREMENTS:

- 126 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.
- Essential Learning Capstone should be completed between 45 and 75 hours.
- 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.

ESSENTIAL LEARNING REQUIREMENTS (31 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.

Course No	Title	Sem.hrs	Grade	Term
English (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		
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*		
*3 credits apply to the Essential Learning requirements and 1 credit applies to Foundation Courses				
Humanities (3 semester hours)				
Social and Behavioral Sciences (6 semester hours)				
SOCI 120	Technology and Society	3		

Course No	Title	Sem.hrs	Grade	Term/Trns
Natural Sciences (7 semester hours, one course must include a lab)				
PHYS 131		4		
PHYS 131L		1		
CHEM 131		4*		
*2 credits apply to the Essential Learning requirements and 2 credits apply to Foundation Courses				
History (3 semester hours)				
HIST ___				
Fine Arts (3 semester hours)				
WELLNESS REQUIREMENT (2 semester hours)				
KINE 100	Health and Wellness	1		
KINA 1___		1		
ESSENTIAL LEARNING CAPSTONE (4 semester hours)				
ESSL 290	Maverick Milestone (see English & math pre-reqs)	3		
ESSL 200	Essential Speech (co-requisite)	1		
FOUNDATION COURSES (13 semester hours) Must complete with a "C" or higher.				
CHEM 131		4*		
*2 credits apply to the Essential Learning requirements and 2 credits apply to foundation courses				
CHEM 131L		1		
MAMT 102	Intro to Machine Shop	1		
MATH 135	Engineering Calculus I	4*		
*3 credits apply to the Essential Learning requirements and 1 credit applies to foundation courses				
MATH 136	Engineering Calculus II	4		
MAMT 105	Print Reading & Sketching	2		
MAMT 106	Geometrical Dim & Tolerancing	2		
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 401	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	Intro to Engineering	1	MATH 136	Engineering Calculus II	4
MATH 135	Engineering Calculus I	4	ENGL 112	English Composition	3
ENGL 111	English Composition	3	ENGR 140	First-Year Engr. Projects	3
ENGR 125	CAD and Fabrication	3	MAMT 102	Intro to Machine Shop	1
KINE 100	Health and Wellness	1	PHYS 131	Fundamental Mechanics	4
MAMT 105	Print Reading & Sketching	2	PHYS 131L	Fundamental Mechanics Lab	1
MAMT 106	Geometric Dim & Tolerancing	2			16
		16			

SOPHOMORE YEAR

Fall Semester		Hours	Spring Semester		Hours
CHEM 131	General Chemistry	4	SOCI 120	Technology and Society	3
CHEM 131L	General Chemistry Lab	1	ENGL 425	Scientific Writing	3
CSCI 130	Intro to Engineering Computing	3	ENGR 224	Materials Science	2
ENGR 261	Statics and Structures	3	ENGR 224L	Materials Science Lab	1
KINA 1	Activity	1	ENGR 263	Mechanics of Solids	3
ESSL	Humanities	3	ESSL 290	Maverick Milestone	3
			ESSL 200	Essential Speech	1
		15			16

JUNIOR YEAR

Fall Semester		Hours	Spring Semester		Hours
ENGR 225	Intro to Manufacturing	3	ENGR 317	Fundamentals of Circuits & Electronics	3
ENGR 305	Engineering Economics & Ethics	2	ENGR 325	Component Design	3
ENGR 312	Engineering Thermodynamics	3	ENGR 343	Dynamics	3
ENGR 321	Fluid Mechanics	3	ENGR 385	Engineering Integration Project II	3
STAT 305	Engineering Statistics & Quality Control	3		Option Credits	3
ENGR 345	Engineering Integration Project I	3			15
		17			

SENIOR YEAR

Fall Semester		Hours	Spring Semester		Hours
ENGR 401	Professionalism Seminar	1	ENGR 435	Industrial Controls	3
ENGR 427	Measurements Lab	2	ENGR 446	Writing for Design Projects	1
ENGR 445	Senior Project 1	3	ENGR 485	Senior Project 2	3
ESSL	History	3	ESSL	Fine Arts	3
ESSL	Social Science	3		Option Credits	6
	Option Credits	3			16
		15			

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: During your senior year, you will be required to take a capstone exit assessment/project (e.g,, Major Field Achievement Test).