

# MECHANICAL ENGINEERING, BSME

**Requirements for Students Matriculating in or before Academic Year 2019-2020.** Learn more about University Academic Regulation 3.1 (<http://catalog.okstate.edu/university-academic-regulations/#matriculation>).

**Minimum Overall Grade Point Average: 2.50**

**Total Hours: 121**

Code	Title	Hours
<b>General Education Requirements</b>		
All General Education coursework requirements are satisfied upon completion of this degree plan		
<i>English Composition</i>		
See Academic Regulation 3.5 ( <a href="http://catalog.okstate.edu/university-academic-regulations/#english-composition">http://catalog.okstate.edu/university-academic-regulations/#english-composition</a> )		
ENGL 1113	Composition I <sup>1</sup>	3
or ENGL 1313	Critical Analysis and Writing I	
Select one of the following:		3
ENGL 1213	Composition II <sup>1</sup>	
ENGL 1413	Critical Analysis and Writing II <sup>1</sup>	
ENGL 3323	Technical Writing	
<i>American History &amp; Government</i>		
Select one of the following:		3
HIST 1103	Survey of American History	
HIST 1483	American History to 1865 (H)	
HIST 1493	American History Since 1865 (DH)	
POLS 1113	American Government	3
<i>Analytical &amp; Quantitative Thought (A)</i>		
MATH 2144	Calculus I (A) <sup>1</sup>	4
MATH 2153	Calculus II (A) <sup>1</sup>	3
MATH 2163	Calculus III <sup>1</sup>	3
<i>Humanities (H)</i>		
Courses designated (H)		6
<i>Natural Sciences (N)</i>		
Must include one Laboratory Science (L) course		
CHEM 1414	General Chemistry for Engineers (LN) <sup>1</sup>	4
or CHEM 1515	Chemistry II (LN)	
PHYS 2014	University Physics I (LN) <sup>1</sup>	4
<i>Social &amp; Behavioral Sciences (S)</i>		
Course designated (S)		6
<b>Hours Subtotal</b>		<b>42</b>
<b>Diversity (D) &amp; International Dimension (I)</b>		
May be completed in any part of the degree plan		
Select at least one Diversity (D) course		
Select at least one International Dimension (I) course		
<b>College/Departmental Requirements</b>		
<i>Math and Basic Science</i>		
MATH 2233	Differential Equations <sup>1</sup>	3
PHYS 2114	University Physics II (LN) <sup>1</sup>	4
Select one of the following:		3

ASTR 1013	The Solar System (N)	
ASTR 1023	Stars, Galaxies, Universe (N)	
BIOL 1114	Introductory Biology (LN)	
CHEM 3053	Organic Chemistry I	
GEOL 1114	Physical Geology (LN)	
GEOL 3413	Petroleum Geology for Engineers	
PHYS 3213	Optics	
PHYS 3313	Introduction to Semiconductor Device Physics	
PHYS 3713	Modern Physics	
<i>Engineering</i>		
ENGR 1111	Introduction to Engineering <sup>1</sup>	1
ENGR 1332	Engineering Design with CAD for MAE <sup>1</sup>	2
ENGR 1412	Introductory Engineering Computer Programming <sup>1</sup>	2
<i>Engineering Science</i>		
ENSC 2113	Statics <sup>1</sup>	3
ENSC 2123	Elementary Dynamics <sup>1</sup>	3
ENSC 2143	Strength of Materials <sup>1</sup>	3
ENSC 2213	Thermodynamics <sup>1</sup>	3
ENSC 2613	Introduction to Electrical Science <sup>1</sup>	3
<b>Hours Subtotal</b>		<b>30</b>
<b>Major Requirements</b>		
<i>Engineering Science</i>		
ENSC 3233	Fluid Mechanics <sup>1</sup>	3
ENSC 3313	Materials Science	3
<i>Specific Professional School</i>		
MAE 3013	Engineering Analysis and Methods I	3
MAE 3113	Measurements and Instrumentation	3
MAE 3233	Heat Transfer	3
MAE 3324	Mechanical Design I	4
MAE 3403	Computer Methods in Analysis and Design	3
MAE 3524	Thermal Fluids Design	4
MAE 3724	Dynamic Systems Analysis and Introduction to Control	4
IEM 3503	Engineering Economic Analysis	3
Select 7 hours of the following 2 categories, selecting one course from each category so that both categories are represented:		7
Category I (Realization):		
MAE 4243	Aerospace Propulsion and Power	
MAE 4263	Energy Conversion Systems	
MAE 4353	Mechanical Design II	
MAE 4363	Advanced Methods in Design	
MAE 4513	Aerospace Structures I	
MAE 4623	Biomechanics	
MAE 4703	Design of Indoor Environmental Systems	
MAE 4713	Thermal Systems Realization	
Category II (Capstone Design):		
MAE 4344	Design Projects	
MAE 4354	Aerospace Systems Design for Mechanical Engineers	

6 hours of MAE electives to be selected from the following list, or from courses in the Category I listed above, but not used to satisfy the category requirement: 6

MAE 3033	Design of Machines and Mechanisms
MAE 3123	Manufacturing Processes
MAE 3223	Thermodynamics II
MAE 3253	Applied Aerodynamics and Performance
MAE 3293	Fundamentals of Aerodynamics
MAE 4053	Automatic Control Systems
MAE 4063	Mechanical Vibrations
MAE 4273	Experimental Fluid Dynamics
MAE 4313	Advanced Processing of Engineered Materials
MAE 4333	Mechanical Metallurgy
MAE 4583	Corrosion
MAE 4733	Mechatronics Design

3 hours of technical elective to be selected from the following list (or from courses in the Category I listed above, but not used to satisfy the category requirement): 3

3000-level or above from:

BAE	
CHE	
CIVE	
ECEN	
IEM	
MAE	
PETE engineering	
BCOM 3223	Oral Communication
Biological Science	
Biochemistry	
Chemistry	
Computer Science	
Legal Studies in Business	
MATH 3303	Advanced Perspectives on Functions and Modeling for Secondary Teachers
MGMT 3133	Developing Leadership Skills
Geology	
PHIL 3803	Business Ethics (H)
PHIL 3833	Biomedical Ethics (H)
Physics	

4000-level or above courses from:

ECON 4113	Energy Economics: Traditional and Renewable Energy Markets
Math	
Mechanical Engineering Technology	
MGMT 4073	Management and Ethical Leadership
MGMT 4533	Leadership Dynamics
Statistics	

<b>Hours Subtotal</b>	<b>49</b>
<b>Total Hours</b>	<b>121</b>

## Admission to Professional School (required)

- Refer to the OSU Catalog corresponding to your matriculation date for detailed admissions requirements.

## Graduation Requirements

- A minimum GPA of 2.50 is required in all MAE prefix Courses.
- A minimum overall GPA of 2.50 is required in 4000-level MAE prefix courses.
- A 'C' or better is required in each course that is a prerequisite for a major course taken.
- The major engineering design experience, capstone course, is satisfied by MAE 4344 Design Projects or MAE 4354 Aerospace Systems Design for Mechanical Engineers.

## Additional State/OSU Requirements

- At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 or 50% of the upper-division hours in the major field completed at OSU.
- Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.
- Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation.
- Degrees that follow this plan must be completed by the end of Summer 2025.

<sup>1</sup> Courses that must be completed prior to admission to professional school with a grade of "C" or higher