

MECHANICAL ENGINEERING: FIRE PROTECTION SYSTEMS, BSME

Requirements for Students Matriculating in or before Academic Year 2022-2023. Learn more about University Academic Regulation 3.1 (<http://catalog.okstate.edu/university-academic-regulations/#matriculation>).

Minimum Overall Grade Point Average: 2.00

Total Hours: 130

| Code | Title | Hours |
|---|---|-----------|
| General Education Requirements | | |
| All General Education coursework requirements are satisfied upon completion of this degree plan | | |
| <i>English Composition</i> | | |
| See Academic Regulation 3.5 (http://catalog.okstate.edu/university-academic-regulations/#english-composition) | | |
| ENGL 1113 | Composition I ¹ | 3 |
| or ENGL 1313 | Critical Analysis and Writing I | |
| Select one of the following: | | 3 |
| ENGL 1213 | Composition II ¹ | |
| ENGL 1413 | Critical Analysis and Writing II ¹ | |
| ENGL 3323 | Technical Writing ¹ | |
| <i>American History & 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 & Quantitative Thought (A)</i> | | |
| MATH 2144 | Calculus I (A) ¹ | 4 |
| MATH 2153 | Calculus II (A) ¹ | 3 |
| MATH 2163 | Calculus III ¹ | 3 |
| MATH 2233 | Differential Equations ¹ | 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) ¹ | 4 |
| or CHEM 1515 | Chemistry II (LN) | |
| PHYS 2014 | University Physics I (LN) ¹ | 4 |
| <i>Social & Behavioral Sciences (S)</i> | | |
| Course designated (S) | | 3 |
| Hours Subtotal | | 42 |
| Diversity (D) & International Dimension (I) | | |
| 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 | | |
| College/Departmental Requirements | | |
| <i>Basic Science</i> | | |

| | | |
|---|---|-----------|
| PHYS 2114 | University Physics II (LN) ¹ | 4 |
| <i>Engineering and Engineering Science</i> | | |
| ENGR 1111 | Introduction to Engineering ¹ | 1 |
| ENGR 1332 | Engineering Design with CAD for MAE ¹ | 2 |
| ENGR 1412 | Introductory Engineering Computer Programming (I) ¹ | 2 |
| ENSC 2113 | Statics ¹ | 3 |
| ENSC 2123 | Elementary Dynamics ¹ | 3 |
| ENSC 2143 | Strength of Materials ¹ | 3 |
| ENSC 2213 | Thermodynamics ¹ | 3 |
| ENSC 2613 | Introduction to Electrical Science ¹ | 3 |
| Choose one of the below laboratory options: ¹ | | 3 |
| <i>OPTION 1 (ENGR 2421 is required for this option)</i> | | |
| ENGR 2421 | Engineering Data Acquisition Controls Lab and two more from the following labs: | |
| ENSC 2141 | Strength of Materials Lab | |
| ENSC 2411 | Electrical Science Lab | |
| ENSC 3231 | Fluids and Hydraulics Lab | |
| ENSC 3311 | Material Science Lab | |
| <i>OPTION 2</i> | | |
| MAE 3113 | Measurements and Instrumentation ² | |
| Hours Subtotal | | 27 |
| Upper Division Major Requirements ² | | |
| ENSC 3313 | Materials Science | 3 |
| MAE 3013 | Engineering Analysis and Methods I | 3 |
| MAE 3153 | Introduction to MAE Design | 3 |
| MAE 3233 | Heat Transfer | 3 |
| MAE 3333 | Fundamental Fluid Dynamics | 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 |
| FPST 1213 | Fire Safety Hazards Recognition | 3 |
| FPST 1373 | Fire Suppression and Detection Systems | 3 |
| FPST 2243 | Design and Analysis of Sprinkler Systems | 3 |
| FPST 3373 | Fire Dynamics | 3 |
| FPST 4143 | Industrial Ventilation and Smoke Control | 3 |
| <i>Select 7 hours of the following 2 categories, selecting one course from each category so that both categories are represented:</i> | | 7 |
| <i>Category I (Realization): ²</i> | | |
| 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 | |
| MAE 4703 | Design of Indoor Environmental Systems | |
| MAE 4713 | Thermal Systems Realization | |
| MAE 4723 | Refrigeration Systems Design | |
| <i>Category II (Capstone Design): ²</i> | | |
| MAE 4344 | Design Projects | |

| | | |
|---|---|------------|
| MAE 4354 | Aerospace Systems Design for Mechanical Engineers | |
| MAE 4374 | Aerospace System Design | |
| <i>Upper Division Elective Requirements</i> | | |
| 3 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: | | 3 |
| 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 FPST/CET 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: | | 3 |
| 3000-level or above from: | | |
| CET 4443 | Construction Safety and Loss Control | |
| FPST 3113 | Advanced Special Hazard Suppression and Detection | |
| FPST 3383 | Building Electrical Systems | |
| FPST 4213 | Advanced Building Design and Analysis | |
| FPST 4383 | Fire and Evacuation Modeling | |
| Hours Subtotal | | 61 |
| Total Hours | | 130 |

1

MAE requires grades of "C" or better for any course that is a pre-requisite or co-requisite to a required course on the degree plan.

2

Grades of "C" or higher in all Upper Division Major Requirements courses and ME Realization Category course and Capstone Design Category course.

Graduation Requirements

1. A "C" or better is required in each course taken that is designated with footnote 1 or footnote 2.
2. The major engineering design experience, capstone course, is satisfied by MAE 4344 Design Projects or MAE 4354 Aerospace Systems Design for Mechanical Engineers or MAE 4374 Aerospace Systems Design.

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 2028.