

MECHANICAL ENGINEERING: PRE-MEDICAL, 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: 135

| 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 | |
| <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 |
| <i>Humanities (H)</i> | | |
| Select 3 hours designated (H) from PHIL ² | | 3 |
| Select 3 hours designated (H) for ENGL | | 3 |
| <i>Natural Sciences (N)</i> | | |
| Must include one Laboratory Science (L) course | | |
| CHEM 1515 | Chemistry II (LN) ¹ | 5 |
| BIOL 1114 | Introductory Biology (LN) | 4 |
| <i>Social & Behavioral Sciences (S)</i> | | |
| Select 6 hours designated (S) from PSYC or SOC ² | | 6 |
| Hours Subtotal | | 43 |
| 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>Math and Basic Science</i> | | |
| MATH 2233 | Differential Equations ¹ | 3 |
| PHYS 2014 | University Physics I (LN) ¹ | 4 |
| PHYS 2114 | University Physics II (LN) ¹ | 4 |

| | | |
|--|--|-----------|
| CHEM 3053 | Organic Chemistry I | 3 |
| BIOL 1604 | Animal Biology | 4 |
| <i>Engineering</i> | | |
| ENGR 1111 | Introduction to Engineering ¹ | 1 |
| ENGR 1332 | Engineering Design with CAD for MAE ¹ | 2 |
| ENGR 1412 | Introductory Engineering Computer Programming ¹ | 2 |
| <i>Engineering Science</i> | | |
| 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 |
| Hours Subtotal | | 38 |
| Major Requirements | | |
| <i>Engineering Science</i> | | |
| ENSC 3233 | Fluid Mechanics ¹ | 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 |
| CHEM 3112 | Organic Chemistry Laboratory | 2 |
| CHEM 3153 | Organic Chemistry II | 3 |
| IEM 3503 | Engineering Economic Analysis | 3 |
| MICR 3033 | Cell and Molecular Biology | 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 |

The following are suggested, but not required:

| | |
|-----------|------------------------|
| BIOC 3653 | Survey of Biochemistry |
| BIOL 3023 | General Genetics |
| BIOL 3204 | Physiology |
| BIOL 4134 | Embryology |

CHEM 1314 is recommended with CHEM 1515 to meet the Oklahoma medical schools' requirement for 9 hours of inorganic chemistry

| | |
|-----------------------|------------|
| Hours Subtotal | 54 |
| Total Hours | 135 |

¹ Courses that must be completed prior to admission to professional school.

² Denotes medical school requirements. PSYC 1113 Introductory Psychology (S) is recommended to satisfy (3) hours of (S) requirement. PHIL 3833 Biomedical Ethics (H) is recommended to satisfy (3) hours of (H) requirement.

Note: The entrance requirements of medical schools of choice should be reviewed to ensure an application is competitive.

Admission to Professional School (required)

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

Graduation Requirements

1. A minimum GPA of 2.50 is required in all MAE prefix Courses.
2. A minimum overall GPA of 2.50 is required in 4000-level MAE prefix courses.
3. A 'C' or better is required in each course that is a prerequisite for a major course taken.
4. 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.