

Mechanical Engineering Course Plan

Catalog Year 2022-2023

Legend

* Major Requirement

Must be taken to fulfill major requirements.

† Major Elective

Must be taken to fulfill major requirements, or replaced with an equivalent course.

‡ Gen-Ed Requirement

Must be taken to fulfill general education requirements.

§ Elective

Can be chosen from a selection of courses.

See MyGFU for detailed academic requirements.

First Year

Fall Semester

| | |
|---------------------------------------|-------------------|
| Engineering Principles I (ENGR 151) * | 3 credits |
| General Chemistry (CHEM 211) * | 4 credits |
| Calculus I (MATH 201) * | 4 credits |
| The Bible (THEO 101) ‡ | 3 credits |
| Caring for Words (WRIT 111) ‡ | 3 credits |
| Semester Total | 17 credits |
| Cumulative Total | 17 credits |

Spring Semester

| | |
|--|-------------------|
| Engineering Principles II (ENGR 152) * | 3 credits |
| General Physics with Calculus I (PHYS 211) * | 4 credits |
| Calculus II (MATH 202) * | 4 credits |
| Christianity (THEO 102) ‡ | 3 credits |
| Communication in Society (COMM 111) ‡ | 3 credits |
| Semester Total | 17 credits |
| Cumulative Total | 34 credits |

Second Year

Fall Semester

| | |
|---|-------------------|
| Principles of Material Science (ENGM 250) * | 3 credits |
| Statics (ENGM 211) * | 3 credits |
| General Physics with Calculus II (PHYS 212) * | 4 credits |
| Calculus III (MATH 301) * | 3 credits |
| Math Elective † | 3 credits |
| Semester Total | 16 credits |
| Cumulative Total | 50 credits |

Spring Semester

| | |
|---|-------------------|
| Circuits & Instrumentation (ENGE 260) * | 4 credits |
| Dynamics (ENGM 212) * | 3 credits |
| Materials & Processes in Manufacturing (ENGM 220) * | 3 credits |
| Engineering Thermodynamics (ENGM 311) * | 3 credits |
| Differential Equations w/ Linear Algebra (MATH 311) * | 4 credits |
| Semester Total | 17 credits |
| Cumulative Total | 67 credits |

Third Year

Fall Semester

| | |
|--|-------------------|
| Servant Engineering I (ENGR 381) * | 2 credits |
| Mechanics of Materials (ENGM 320) * | 3 credits |
| Fluid Mechanics (ENGM 330) * | 3 credits |
| Application of Engineering Thermodynamics (ENGM 312) * | 2 credits |
| Machine Dynamics and Vibrations (ENGM 350) * | 3 credits |
| Personhood (PSYC 100) ‡ | 3 credits |
| Semester Total | 16 credits |
| Cumulative Total | 83 credits |

Spring Semester

| | |
|---|-------------------|
| Servant Engineering II (ENGR 382) * | 2 credits |
| Finite Elements & Computer Model (ENGM 360) * | 3 credits |
| Mechanical Engineering Design (ENGM 400) * | 3 credits |
| Mechanics of Materials Lab (ENGM 321) * | 1 credits |
| Heat Transfer (ENGM 380) * | 3 credits |
| Energy Lab (ENGM 381) * | 1 credits |
| Justice (SSCI 100) ‡ | 3 credits |
| Semester Total | 16 credits |
| Cumulative Total | 99 credits |

Fourth Year

Fall Semester

| | |
|--|--------------------|
| Senior Design I (ENGR 481) * | 1 credits |
| Engineering Senior Seminar (ENGR 490) * | 1 credits |
| Mechanical Engineering Elective (ENGM 4xx) † | 3 credits |
| Control Systems Engineering (ENGM 480) * | 3 credits |
| Arts & Global Culture (ARTP/V 120) ‡ | 3 credits |
| Ethics (THEO 380) ‡ | 3 credits |
| Semester Total | 14 credits |
| Cumulative Total | 113 credits |

Spring Semester

| | |
|--|--------------------|
| Senior Design II (ENGR 482) * | 3 credits |
| Mechanical Engineering Elective (ENGM 4xx) * | 3 credits |
| Faith & Story (LITR 111) ‡ | 3 credits |
| Principles of Economics (ECON 200) * | 3 credits |
| The Modern & Postmodern World (HIST 111) ‡ | 3 credits |
| Semester Total | 15 credits |
| Cumulative Total | 128 credits |