

Mechanical Engineering

| FIRST YEAR | | SECOND YEAR | | THIRD YEAR | | FOURTH YEAR | |
|----------------------------------|---|---|---|--|---|-----------------------------------|---------------------------------------|
| FALL | SPRING | FALL | SPRING | FALL | SPRING | FALL | SPRING |
| GESM (GE B) 4 | WRIT 150 4 | GE C 4 | GE D* 4 | WRIT 340 WRIT 150 4 | GE B 4 | AME 451 AME 302, MATH 245 3 | GE C 4 |
| AME 101L 3 | GE A* 4 | AME 201 PHYS 151Lg or 161Lg or 171L 3 | AME 204 AME 201 or CE 205 3 | AME 301 AME 201 or CE 205 3 | AME 302 MATH 245 3 | AME CORE 3 | AME CORE 3 |
| MATH 125 (GE F)* 4 | MATH 126 or MATH 129* MATH 125 4 | MATH 226 or MATH 229 MATH 126 or 129 4 | MATH 245 MATH 226 or 229 4 | AME 308 AME 204, (AME 301) 3 | AME 309 AME 201, (MATH 245) 4 | AME DESIGN ELECTIVE 3 | AME CAPSTONE ELECTIVE 3 or 4 |
| CHEM 105aL or MASC 110L* 4 | PHYS 151L (GE E) MATH 125 or 126 or 226 4 | PHYS 152L PHYS 151L (MATH 226) 4 | PHYS 153L PHYS 152L 4 | MASC 310 4 | AME 331 AME 310, (AME 309 or CE 309) 3 | AME 441aL AME 341bL 3 | AME CORE 3 |
| ENGR 102 2 | ITP 168 2 | OPTIONAL ELECTIVE 3 | AME 310 MATH 226 or 227 or 229 3 | AME 341aL PHYS 152L or 162L, MATH 126 or 127 or 129 3 | AME 341bL AME 341aL 3 | AME CORE 3 | OPTIONAL ELECTIVE 3-6 |
| OPTIONAL ELECTIVE 1 | | | | OPTIONAL ELECTIVE 1 | OPTIONAL ELECTIVE 1 | OPTIONAL ELECTIVE 3 | |

MATHEMATICS (16 UNITS)

MATH 125: Calculus I*

MATH 126 or MATH 129: Calculus II*

MATH 226 or MATH 229: Calculus III

MATH 245: Mathematics of Phys. and Engr.

PHYSICS (12 UNITS)

PHYS 151L: Mechanics and Thermodynamics

PHYS 152L: Electricity and Magnetism

PHYS 153L: Optics and Modern Physics

CHEMISTRY/MATERIALS SCIENCE (4 UNITS)

CHEM 105aL: General Chemistry*

or **MASC 110L:** Materials Science

GENERAL EDUCATION (32 UNITS)

GE A The Arts (1 Course)*

GE B Humanistic Inquiry (2 Courses)

GE C Social Analysis (2 Courses)

GE D Life Sciences (1 Course)*

GE E Physical Sciences (1 Course)*

GE F Quantitative Reasoning (1 Course)*

GE G,H Global Perspectives (2 Courses)*

GESM General Education Seminar (1 Course)

WRITING (8 UNITS)

WRIT 150: Writing and Critical Reasoning

WRIT 340: Advanced Writing

ENGINEERING (66 UNITS)

AME 101L: Intro. to Mech. Engr. & Graphics

AME 201: Statics

AME 204: Strength of Materials

AME 301: Dynamics

AME 302: Dynamic Systems

AME 308: Comp. Aided Analysis for Design

AME 309: Fluid Dynamics

AME 310: Engineering Thermodynamics I

AME 331: Heat Transfer

AME 341aL: Mechoptronics Laboratory I

AME 341bL: Mechoptronics Laboratory II

AME 441aL: Senior Projects Laboratory

AME CORE

AME DESIGN ELECTIVE

AME CAPSTONE ELECTIVE

ENGR 102: Engineering Freshman Academy

ITP 168: Introduction to MATLAB

MASC 310: Mechanical Behavior of Materials

TECHNICAL ELECTIVES

SPECIAL NOTES

Courses with the * symbol may be satisfied with AP, IB or A-Level exams. See page 16 for more information.

GE: Engineering students are encouraged to satisfy GE G and GE H with a course that also satisfies a Core Literacy. GE H may be satisfied by AP/IB. Additionally, your GESM course should be taken in categories A, B, C, or D only. See page 15 for more information and consult your advisor for detailed assistance.

OPTIONAL ELECTIVES: Consult with your academic advisor to explore optional elective courses. These courses are not required.

AME CORE: Any upper-division AME course not already required.

AME CAPSTONE: AME 409, 415, 423, 430 or 443.

AME DESIGN ELECTIVE: AME 408, 430 or any special topic design course.

Optional Course Tracks for Mechanical Engineering

The Mechanical Engineering curriculum covers foundational concepts in a number of areas, ranging from dynamics and aerodynamics to computer-aided analysis for design to computational solutions to engineering problems. Through the first several semesters, students will gain exposure to foundational concepts in Aerospace and Mechanical Engineering.

Students following the standard program will have the opportunity to take more technical and AME Core electives, while students pursuing one of the following specialized tracks will take specific courses relative to the specialization.

| Computational | Design | Dynamics & Controls | Thermo & Fluids | | | | |
|---------------------------|----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|---|--|--|
| FOURTH YEAR | | FOURTH YEAR | | FOURTH YEAR | | FOURTH YEAR | |
| FALL | SPRING | FALL | SPRING | FALL | SPRING | FALL | SPRING |
| ITP 165 2 | GE C 4 | AME 305 AME 204 or CE 225 3 | GE C 4 | GE C 4 | AME 423 (EE 301 or AME 302) and PHYS 152 3 | TECH ELECTIVE 3 | GE C 4 |
| AME 404 3 | MATH 445 MATH 245 or 225 4 | AME 451 3 | AME 403 AME 204 3 | AME 451 AME 302, MATH 245 3 | AME 420 MATH 245 3 | AME 415 3 | AME 414 AME 310 3 |
| AME 415 3 | CSCI 455 4 | AME 410 3 | AME 409 4 | TECH ELECTIVE 2 | AME 443 AME 420 or 451 or EE 482 3 | AME 430 AME 331 3 | AME 436 AME 310 and (AME 309 or CE 309) 3 |
| EE 141L 4 | AME 408 AME 204 3 | AME 441a AME 341bL 3 | AME 408 AME 204 or CE 225 3 | AME 303 AME 301, CE 235 3 | AME 453 MATH 245 3 | AME 457 AME 310 and (AME 309 or CE 309) 3 | TECH ELECTIVE 3 |
| AME 441a AME 341b 3 | OPTIONAL ELECTIVE 3 | OPTIONAL ELECTIVE 6 | AME 420 MATH 245 3 | AME 441a AME 341bL 3 | TECH ELECTIVE 4 | AME 441aL AME 341bL 3 | TECH ELECTIVE 2 |
| OPTIONAL ELECTIVE 3 | | | OPTIONAL ELECTIVE 1 | OPTIONAL ELECTIVE 3 | OPTIONAL ELECTIVE 2 | OPTIONAL ELECTIVE 3 | OPTIONAL ELECTIVE 3 |