Mechanical Engineering B.S. Curriculum

First Year/ Freshman

Semester One:
- Physical Education 1
- First Year Writing Seminar 1
- CS: 111X, Intro to Computer Science (Matlab Recommended)
- MATH 1910: Calculus for Engineers (unless AP, take during current term)
- CHEM 2090: Engineering General Chemistry

Semester Two:
- Physical Education 2
- First Year Writing Seminar 2
- ENGRI 1XX0: Intro to Engineering
- MATH 1920: Multivariable Calculus for Engineers (unless AP, take during current term)
  - Prerequisite: MATH 1910
  - Co-requisite: PHYS 1112, ENGRD 2020
- PHYS 1112: Mechanics and Heat (unless AP, take during current term)
  - Co-requisite: ENGRD 2020, MATH 1920

Second Year/ Sophomore

Semester One:
- Liberal Studies (can take any term)
- ENGRD 2210: Thermodynamics (must take during current term)
  - Prerequisite: PHYS 1112, MATH 1920,
  - Co-requisite: MAE 3230
- ENGRD 2020: Statics & Mech. of Solids (must take during current term)
  - Prerequisite: PHYS 1112
  - Co-requisite: MATH 1920
- MATH 2930: Differential Equations
  - Prerequisite: MATH 1920
- PHYS 2213: Electromagnetism (unless AP, take during current term)
  - Prerequisite: MATH 1920, PHYS 1112

Semester Two:
- Liberal Studies (can take any term)
- MAE 2250: Mech. Synthesis (must take during current term)
  - Prerequisite: ENGRD: 2020
  - Co-requisite: MAE 2030
- MAE 2030: Dynamics (must take during current term)
  - Prerequisite: ENGRD 2020, MATH 2930
Co-requisite: MATH 2940

MATH 2940: Linear Algebra (unless AP, take during current term)
  ○ Prerequisite: MATH 1920

Junior Standing

Semester One:

- Liberal Studies (can take any term)
- MAE 3230: Fluid Mechanics (must take during current term)
  ▪ Prerequisite: MAE 2030
  ▪ Co-requisite: ENGRD 2210
- MAE 3270: Mechanics of Engineering Materials (must take during current term)
  ▪ Prerequisite: ENGRD 2020, MATH 2940
- MAE 3780: Mechatronics or ECE 2100 or PHYS 3360 (must take during current term)
  ▪ Prerequisite: MATH 2930, PHYS 2213

Semester Two:

- Liberal Studies (can take any term)
- MAE 3240: Heat Transfer (must take during current term)
  ▪ Prerequisite: MAE 3230
- MAE 3260: System Dynamics (must take during current term)
  ▪ Prerequisite: MAE 2030, MATH 2930, MATH 2940

Senior Standing

Semester One:

- Liberal Studies (can take any term)
- MAE 4272: Fluid/Thermo Lab (must take during current term)
  ▪ Prerequisite: MAE 3240
- MAE 4300: Professor Practice in Mechanical Engineering (must take during current term)
- MAE 4XX1: Senior Design (must be taken first or second semester of senior year)

  Optional: Apply for early admittance to Master of Engineering

Semester Two:

- Liberal Studies (can take any term)

Flexible Timing Courses:

- Technical Elective
- Math Elective
- PHYS 2214: Oscillations, Waves, and Quantum Physics
  ▪ Prerequisite: MATH 1920, MATH 2930, PHYS 2213
- Advisor approved Elective 1
• Advisor approved Elective 2
• Major approved Elective 1
• Major approved Elective 2
• Major approved Elective 3

Notes:
• MAE 4272 satisfies the Engineering Communications requirement
• The probability and Statistics requirement is satisfied by some (not all) Math Elective Courses. Consult mae.cornell.edu for a list of courses and more information