B.S. in Mechanical Engineering
Curriculum of Mechanical Engineering, 2021-2022

Freshman:
1st semester (16 credits)
- MAE 1001 (1, F)
  Intro to Mechanical & Aerospace Engineering
- MATH 1231 (3, F&S)
  Single Variable Calculus I
- SEAS 1001 (1, F)
  Engineering Drawing and Computer Graphics
- CHEM 1111 or CHEM 1113 (4, F&S)
  General Chemistry
- UW 1020 (4, F&S)
  University Writing

Freshman:
2nd semester (16 credits)
- MAE 1004 (3, F&S)
  Intro to Engineering Computations
- PHYS 1021 (4, F&S)
  University Physics I
  Pre: MATH 1231
  Co: MATH 1232
- MAE 1117 (3, S)
  Intro to Engineering Computations

Sophomore:
1st semester (16 credits)
- APSC 2057 (3, F&S)
  Analytical Mechanics I
  Pre/Co: APSC2113, PHYS 1021
- APSC 2113 (3, F&S)
  Engineering Analysis I
  Pre/Co: MATH 2233
- PHYS 1022 (4, F&S)
  University Physics II
  Pre: PHYS 1021
- H/SS 1 (3)

Sophomore:
2nd semester (16 credits)
- APSC 2058 (3, F&S)
  Analytical Mechanics II
  Pre: APSC 2057
- MAE 2131 (3, S)
  Thermodynamics
  Pre: PHYS 1021
- CE 2220 (3, F&S)
  Mechanics of Solids
  Pre: APSC 2057, 2113
- H/SS 2 (3)

Junior:
1st semester (19 credits)
- MAE 3126 (3, F)
  Fluid Mechanics
  Pre: APSC 2058
- MAE 3127 (1, F)
  Fluid Mechanics Lab
  Co: MAE 3126
- MAE 3191 (3, F)
  Mechanical Design
  Pre: CE 2220
- MAE 3192 (3, F)
  Manufacturing Process and Systems
  Pre: MATH 1232
- H/SS 3 (3)

Junior:
2nd semester (16 credits)
- MAE 3187 (3, S)
  Heat Transfer
  Pre: MAE 3126, 2131
- MAE 3134 (3, S)
  Linear System Dynamics
  Pre: APSC 2058, 2113
- MAE 3193 (3, S)
  Mechanical Systems Design
  Pre: MAE 3191
- MAE 3167W (1, S)
  Mechanics of Materials Lab
  Pre: MAE 3166
- H/SS 4 (3)

Senior:
1st semester (15 credits)
- MAE 4149 (3, F)
  Thermal Systems Design
  Pre: MAE 3187
- MAE 4162 (3, F)
  Electromechanical Control System Design
  Pre: MAE 3127, 3134
- MAE 4151 (3, F)
  Capstone Design Project I
  Pre: MAE 3193
- MAE 4152 (3, S)
  Capstone Design Project II
  Pre: MAE 4151
- Technical Elective (3)

Senior:
2nd semester (15 credits)
- Technical Elective (3)
- Technical Elective (3)
- Technical Elective (3)
- H/SS 5 (3)
- H/SS 6 (3)
- Technical Elective: Shall be selected from among the MAE 3000, 4000, or 6000 level courses, except that the following are excluded: MAE 3171,4172, 6298, 6299, 6999. All technical electives must be approved by the undergraduate advisor. Technical courses from other departments (3000, 4000, or 6000 level) may be permitted, on a case by case basis, if approved by both the undergraduate advisor and department chair. ASME membership recommended
- FE Exam recommended in the senior year

Color Code:
- Design Courses
- Mechanical, Materials, Processes
- Electrical, Measurements, Controls
- Thermal/Fluid Sciences
- Engineering Orientation, Computations
- Humanities/Social Sciences, Writing
- Mathematics
- Basic Science

F = fall semester, S = spring semester
Pre = Pre-requisite
Co = Co-requisite
Pre/Co = Pre-requisite or Co-requisite
H/SS = Humanities / Social Sciences - all MAE students must take one humanities course and two social science courses from University General Education requirement; PHIL 2135, and two additional humanities or social science or non-technical courses from SEAS/MAE Department’s pre-approved list of electives.

Directions:
- The curriculum is designed to provide a solid foundation in mechanical engineering principles.
- Students must complete all required courses to graduate.
- Electives are available to tailor the curriculum to individual interests.
- For more information, please consult the department advisor.

Technical Elective: Shall be selected from among the MAE 3000, 4000, or 6000 level courses, except that the following are excluded: MAE 3171,4172, 6298, 6299, 6999. All technical electives must be approved by the undergraduate advisor. Technical courses from other departments (3000, 4000, or 6000 level) may be permitted, on a case by case basis, if approved by both the undergraduate advisor and department chair. ASME membership recommended
- FE Exam recommended in the senior year