MECHANICAL ENGINEERING

Educational Objectives

The Mechanical Engineering Program prepares students to attain the following program educational objectives a few years after graduation:

1. Have engineering or other careers in industry, government, and/or will pursue advanced graduate or professional degrees.
2. Apply their engineering knowledge, critical thinking, creativity, and problem-solving skills in professional engineering practice or in non-engineering fields.
3. Continue to advance their knowledge, communication, and leadership skills through graduate education, professional development courses, self-directed study, and/or on-the-job training, and experience.
4. Apply their understanding of societal, environmental, and ethical issues to their professional activities.

Mechanical Engineering Provides

- The opportunity to prepare for careers in traditional, new, and emerging technologies related to the practice of Mechanical Engineering.
- In-depth technical elective courses in six concentrations.
- Opportunities for students to develop an understanding of such subject areas as solid mechanics, fluid mechanics, thermal sciences, mechanical design, structures, materials controls, and instrumentation.
- Opportunities to develop a strong background in the engineering sciences to learn the analysis, design, and synthesis tools necessary to function successfully as active participants in traditional, new, and emerging areas of technology.

Concentration Areas:

- Energy, Thermal and Fluid Systems
- General Mechanical Engineering
- Manufacturing Engineering and Systems
- Mechanics and Materials
- Mechanical Systems and Designs
- Oil and Gas

Student Organizations

ASME - American Society of Mechanical Engineers
SAE - Society of Automotive Engineers
ASHRAE - American Society of Heating and Refrigerating Engineers

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ceid.utsa.edu/mechanical
# Mechanical Engineering

**PROGRAM OF STUDY**

**2022-2024 UNDERGRADUATE CATALOG**

## Fall (Semester I)
- **AIS 1243**: AIS: Engineering, Mathematics, and Sciences
- **CHE 1103**: General Chemistry I
- **MAT 1214**: Calculus I (core and major)
- **ME 1403**: Engineering Practice and Graphics
- **WRC 1013**: Freshman Composition I (core)

## Spring (Semester II)
- **MAT 1224**: Calculus II
- **PHY 1943**: Physics for Sci and Engineers I (core and major)
- **POL 1013**: Intro to American Politics (core)
- **WRC 1023**: Freshman Composition II (core)
- **American History (core)**

### Semester Credit Hours: 16

## Fall (Semester III)
- **EGR 2103**: Statics
- **EGR 2323**: Applied Engineering Analysis I
- **PHY 1963**: Physics for Sci and Engineers II (core and major)
- **EGR 1403**: Technical Communication (or other core option)
- **Math/Science Elective**

## Spring (Semester IV)
- **EE 2213**: Electric Circuits and Electronics
- **EGR 2513**: Dynamics
- **ME 3241**: Materials Engineering Lab
- **ME 3293**: Thermodynamics I

### Semester Credit Hours: 16

## Fall (Semester V)
- **ME 2173**: Numerical Methods
- **ME 3113**: Measurements and Instrumentation
- **ME 3663**: Fluid Mechanics
- **ME 3813**: Mechanics of Solids
- **ME 4293**: Thermodynamics II

## Spring (Semester VI)
- **ME 3263**: Manufacturing Engineering
- **ME 3541**: Dynamics and Controls Lab
- **ME 3543**: Dynamic Systems and Control
- **ME 3823**: Machine Element Design
- **ME 4313**: Heat Transfer

### Semester Credit Hours: 18

## Fall (Semester VII)
- **ME 4312**: Thermal and Fluids Lab
- **ME 4543**: Mechatronics
- **ME 4801**: Manufacturing Practices Lab
- **ME 4812**: Senior Design I
- **POL 1133**: Texas Politics and Society (core)

## Spring (Semester VIII)
- **ME 4813**: Senior Design II
- **ME Technical elective**
- **American History (core)**
- **Social and Behavioral Sciences (core)**

### Semester Credit Hours: 14

## Total Credit Hours: 128