

**MECHANICAL ENGINEERING PROGRAM**  
**ABET COURSE SYLLABUS**

**ME 128 Introduction to Mechanical Engineering I (1 Unit) Required**

**Course Description:**  
**(2019-21 Catalog)**

**ME 128. Introduction to Mechanical Engineering I.1 unit**

Term Typically Offered: F

Introduction to mechanical engineering and its application in professional practice. Includes design, analysis, testing and dissection of mechanical engineering systems, from simple machines to more complicated systems. Introduction to engineering graphic communication. Introduction to HVAC, Manufacturing and Mechatronics concentrations. Includes cornerstone service learning project. 1 laboratory.

**Prerequisite Courses:**

Concurrent: ME 163.

**Prerequisites by Topic:**

Freshmen Orientation to Mechanical Engineering

**Textbook:**  
**(and/or other required material)**

Laboratory Manual provided by the instructor.

**References:**

None

**Course Coordinator/Instructor:** Andrew Davol, Professor, Mechanical Engineering

**Course Learning Outcomes:**

On completion of this course students will be able to:

1. Describe the scope of mechanical engineering.
2. Understand basic mechanical devices and systems.
3. Apply the engineering design process and considerations.
4. Formulate design requirements for open-ended broad engineering problem.

**Relationship of Course to Mechanical Engineering Student Outcomes:**

SO 1: Introduce (I)  
SO 2: Introduce (I)  
SO 3: Introduce (I)  
SO 4:  
SO 5: Introduce (I)  
SO 6: Introduce (I)  
SO 7: Introduce (I)

**Topics Covered:**

See below ... Lab only class

**Laboratory Projects:**

- Introduction to the design process
- Establish customer needs
- Initial Prototyping
- Electrical machine dissection, motors, gears, bearings
- Combustion engine dissection, pistons, valves, timing
- Analysis of three different types of springs, formal reporting
- Introduction to mechatronics, programming
- Introduction to HVAC, air conditioner efficiency testing
- Tour Net-Zero house
- Shop safety tour and test

**Class/Lab Schedule:**

One 170-minute lab per week

**Contribution of Course to Meeting the Professional Component:**

- |   |   |
|---|---|
| (a) College-level mathematics and basic sciences: | 0 credits                               |
| (b) Engineering Topics:<br>Design                 | 1.0 credits<br>(0.5 credits of 1 total) |
| (c) General Education:                            | 0 credits                               |
| (d) Other:  | 0 credits                               |

**Prepared by:**  
**Andrew Davol**

**Date: 10/11/2019**