



ME364 Manufacturing Technology Lab (Required Course)

Code and Name: ME364 Manufacturing Technology Lab

Credit Hours: 1 (Lecture: 0, Tutorial: 0, Lab/Practical: 2)

Textbook:

- Principles of Modern Manufacturing, Mikell P. Groover, 4th Edition, John Wiley & Sons, Inc., 2011.

Other References:

- Manufacturing Engineering and Technology, Serope Kalpakjian, Steven R. Schmid, and Hamidon Musa, 6th Edition, Pearson Education, 2009.

- YouTube movies to show the manufacturing processes.

Course Description:

Observing various safety measures. Practical demonstration, field trips, and learning of various production processes such as casting, forming, welding, metal cutting, machining. Familiarization and training on various measuring instruments and estimating measurement variations. Identifying typical errors.

Pre-requisites: ME363 Manufacturing Technology.

Co-requisites: None

Course Learning Outcomes:

With relation to ABET Student Outcomes (SOs: 1-7)

1. Recognize various production processes
2. Recognize of the safety needs and adhere to the safety rules and regulation
3. Estimate measuring variations
4. Explain the theoretical foundation of the experiments being performed (6)
5. Recognize and familiarize various measuring instruments and gauges used in manufacturing
6. Demonstrate the ability to work independently & as a team. (5)
7. Research and obtain information about topics, machines and devices not covered in the theoretical course.

Topics to be covered:

- Introduction to Manufacturing Technology lab safety rules and precautions; Presentation about lab report writing.
- To take measurements of various samples using Vernier calipers, internal micrometer screw gauge and quick calipers.
- To demonstrate the use of different gauges for specialized measurements.
- To study various parts and cutting tools used for a Centre Lathe Machine.
- To study and demonstrate various operations that can be performed on lathe machine.
- To study drill machines with related tools and operations.
- To demonstrate the roll bending of various plates using single pinch type roll machine.
- To study and demonstrate different welding processes.
- To study and demonstrate different processes for fabrication of plastics.
- To study and demonstrate different casting processes and foundry tools.

Grading Policy:

The grading for the course are 60% coursework and 40% Final Exam. The course work consists of one Midterm Exam, worth 20%. It also includes lab reports and projects for the remaining 40% that is modified by the course instructor.

