

MECH 392 Manufacturing Processes

Instructor: Ahmad Mohammadpanah

PhD, PEng

Course overview

Do you have the tools and confidence to enter a factory and be able to understand its operations and make suggestions for improvement? Do you know how your everyday use simple items such as, water bottle, cloth hanger, electric power plug, toothbrush, gym dumbbell, coffee cup lid, Gillet razer handle, garbage bags, and so on to more sophisticated items such as your cellphone or laptop enclosure, parts in your bicycle or car, aircraft parts, and many other parts around you are made? Have you heard of additive manufacturing, such as fused deposition modeling or metal laser sintering? MECH 392 is an introduction to a wide range of manufacturing processes. In this course you will learn the fundamentals and applications of many manufacturing processes through lots of examples and video demonstrations. You will also gain a perspective on the future of manufacturing and how it will be shaped by advanced technologies.

Course Modules:

0. Review of manufacturing characteristics of materials and their control
 1. Machining
 2. Sheet Metal Forming
 3. Injection Molding
 4. Thermoforming
 5. Casting
 6. Forging
 7. Powder Metallurgy
 8. Additive Manufacturing
 9. Quality and Monitoring
10. An introduction to Intelligent Manufacturing (application of machine learning and Artificial Intelligent in Manufacturing)

Note: Please Check Canvas/Modules for each Module Notes, details and the class Lecture Notes.

Evaluation:

- Start Quiz (Thursday September 10th), 5%
- Midterm (Tuesday October 20th), 30%
- Final Exam, 55%
- Assignments, 5%
- Projects, 5%