

EML 4263C – FABRICATION OF ME SYSTEMS
Common Course Syllabus

Catalog Data: 2 CREDITS. An introductory course directed at acquainting mechanical engineering students with the basic machinery and machining processes used to fabricate parts of mechanical engineering systems.

Prerequisite: EGM 3365 – Engineering Materials

Corequisite: EML 4521C Engineering Design

Goals: This course will introduce the students to the following topics: reading production drawings; understanding dimensioning specifications and tolerances; reviewing manufacturing processes and their application, performance and cost; machine shop processes (turning, milling, drilling, welding operations which will be covered in detail and practiced in the shop; fundamentals of CNC machine tools and their programming; 2D CNC programming and G codes; testing of welds and fasteners, tool selection and machining parameters.

Topics:

1. Machine shop safety and OSHA Standards
2. Reading production drawings;
3. Understanding of dimensions and tolerances;
4. Review of manufacturing processes, their application, performance and cost;
5. Machine shop processes (turning, milling drilling, welding and others) will be covered in detail and practiced in the machine shop;
6. Fundamentals of CNC machine tools and their programming;
7. Laboratory/machine shop activities will include 2D CNC programming using G codes, testing of welding and fasteners, selection of tools and machining parameters.

Course Outcomes: (numbers in parentheses indicate correlation of the outcome with the appropriate ABET program outcomes 1-7)

1. Students will understand machine shop safety procedures and OSHA Standards. (4)
2. Students will be able to read production drawings and gain an understanding of dimensions and tolerances. (2,6)
3. Students will understand different manufacturing processes, their application, performance and cost. (2,6)
4. Students will demonstrate an understanding of machine shop processes (turning, milling drilling, welding ant others) which will be practiced in the machine shop. (2,6)
5. Students will understand the fundamentals of CNC machine tools and their programming. (2,6)

Design Content:

This course has no design content.

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