

MAE 1024 INTRODUCTION TO MECHANICAL ENGINEERING
Fall

2006-07 Catalog Description: Provides an overview of the engineering profession and the mechanical engineering discipline. Introduces students to engineering problem solving methodologies and design theory & methodology. A competitive design project motivates the study of engineering graphics, computer-aided design, manufacturing techniques, and software tools. (CL)

Prerequisites by Topic: None.

Corequisite by Topic: None.

Textbook (T) and References (R): (T) J. Wickert, An Introduction to Mechanical Engineering, 2004, Books/Cole, (T) (T) F. Giesecke et al, Modern Graphics Communication 3rd ed., 2004, Prentice Hall.

Course Objectives: The student will be able to:

1. Have a working knowledge of who an engineer is
2. Understand the various engineering disciplines
3. Have a working knowledge of the engineering design process
4. Effectively use basic software tools (Word, Excel, PowerPoint, Matlab)
5. Prepare and present both written & oral engineering project reports
6. Effectively use engineering graphics to communicate ideas
7. Understand the concept of features based solid models
8. Develop the ability to conceptualize, create, and build simple 3-D geometries with a focus on mechanical parts and assemblies
9. Have a working knowledge of basic machine tool manufacturing operations (drilling, milling, turning, welding, finishing, etc.)
10. Develop an understanding of the relationship between detailed drawings and manufacturing processes

Topics Covered:

1. Introduction to the Engineering Profession (6 lecture classes)
2. Academic Survival Skills for Engineers (2 lecture class)
3. Engineering Graphics (10 lecture classes)
4. Design Theory and Methodology (10 lecture classes)
5. Engineering Project Management (2 lecture class)
6. Introduction to software tools (WORD, EXCELL, POWERPOINT, MATLAB) (12 lab classes)
7. Introduction to Computer-Aided Design (10 project based lab classes)
8. Introduction to Manufacturing Processes (6 project based lab classes)
9. Design Project Presentation (2 lab classes)
10. Final Exam

Class Schedule: Monday & Wednesday 3:00 – 3:50 Lecture

Tuesday & Thursday Lab Sessions (1:15 duration each mtg.)

Relationship of Course to Program Objectives: Satisfies the University's Computer Literacy Core Requirement.

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