Course: ENGR 12000 – Graphical Communication and Spatial Analysis

Type of Course: Required for all undergraduate engineering programs

Catalog Description: The principles of engineering graphics are applied to the visualization, communication, and graphical analysis of problems. Included are the utilization of sketching and computer-aided design to create and analyze computer-generated geometric models, manipulative coordinate systems, generate selective views, conform to graphic and data standards, and interpret engineering drawings.

Credits: 2

Contact Hours: 2

Prerequisite Courses: MA 15300

Corequisite Courses: None

Prerequisites by Topics: Algebra and Trigonometry


Course Objectives: To develop students’ ability to prepare and to interpret graphical presentations of physical objects and to communicate their design ideas clearly. To begin developing their skills working with computer tools.

Course Outcomes: Students who successfully complete this course will have demonstrated an ability to:
1. Create two-dimensional drawings of an object (k)
2. Dimension parts according to convention (k)
3. Represent an object in a multi-view orthographic drawing (k)
4. Create an isometric drawing of an object (k)
5. Create a sectioned view of an object (k)
6. Create a solid model of an object (k)
7. Create a drawing as part of a team (d)
8. Communicate important aspects of a drawing orally and in writing (g)
9. Use modern computer tools for drawings, memos, and presentations (g)
Lecture Topics

1. Drawing Basics (4)
2. Dimensioning (2)
3. Orthographic Projection (1)
4. Sections & Isometrics (2)
5. Solid Modeling (3)
6. Projects & Presentation (2)
7. Exam (1)

Computer Usage
High

Laboratory Experience
None

Design Experience
Low

Coordinator
Scott Moor, Ph.D., P.E.

Date
10 May 2011