EGN 1111C - ENGINEERING GRAPHICS
Common Course Syllabus

Catalog Data: 3 CREDITS. Sketching techniques. Multiview drawings, pictorials, section views, auxiliary views, and engineering problem layout. Descriptive geometry. Three-dimensional modeling and computer graphics, simulations and studies, introduction to CAM.

Goals: This course is designed for students to learn the techniques and standard practices of engineering graphic communication. To facilitate communication basic skills in word processing, image generation, and report writing are introduced at the beginning of the course. File organizational skills are imposed as assignments address basic concepts, fundamental principles, graphics conventions, and industrial standards. The emphasis is on 3-D solid modeling strategies and their applications in technical design communication while exploring hands-on sketching skills, their historic precedents, and application.

Topics: (The number of sessions merely provides guidelines, and is subjected to change by individual instructor)

1. Introduction to reporting tools and clerical ordering strategies (2 hours)
2. Introduction of graphics communication (2 hours)
3. Engineering geometry (2 hours)
4. Projection theory (2 hours)
5. Multiview drawings – by hand (2 hours)
6. Auxiliary view and section view (2 hours)
7. Pictorial drawings (2 hours)
8. Dimensioning and tolerancing practices (2 hours)
9. 3-D modeling (10 hours)
10. Use graphics software for drawing, modeling, and analyzing (30 hours)
    (Total 56 hours)

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

1. Students will understand the concepts of different types of projections and know how to use them to describe an object. (1)
2. Students will be able to read and visualize technical drawings. (1)
3. Students will understand the basic geometry behind technical drawings. (1)
4. Students will be able to use modern CAD tools to model parts and assemblies, and to make drawings for manufacturing. (2)
5. Students will be able to communicate on engineering processes using a range of written, drawn, and animated media. (3)

Design Content:

There is a single group project used to demonstrate and test communication strategies and coordinated actions in the design of simple structures or mechanisms. Accountability to client specifications is a large part of this exercise.

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