EGR 113 - ENGINEERING GRAPHICS I

Course Description

This course introduces traditional and contemporary methods of graphical communication in the context of engineering design, including sketching, orthographic projection, dimensioning, and tolerancing. Students also utilize modern parametric design software to generate 3-D models and 2-D drawings to benchmark and refine designs, including the use of finite element analysis and 3-D printing. Group 2 course.

Credit Hours

3

Contact Hours

4

Lecture Hours

4

Recommended Prerequisites or Skills Competencies

ENG 111

General Education Outcomes supported by this course

Critical Thinking - Direct

Course Learning Outcomes

Knowledge:
- Demonstrate engineering problem solving skills associated with 2D and 3D Computer Aided Modeling to evaluate problems, employ accumulated techniques, and derive solutions.

Application:
- Explore through experiential learning, related topics mentioned in the course description. Real world examples will be presented including examples of how to solve the problems. Various assignments related to the same topics will be given, and quizzes used to evaluate the level of understanding and assess student progress.

Integration:
- Identify the relationships defining the 2D and 3D methods of computer aided modeling, and identify how unique problem solving methods can be utilized to graphically solve complex problems.

Human Dimension:
- Derive interpersonal and team work skills by comparing design products.

Caring - Civic Learning:
- Understand the importance of precision and accuracy in their work and the potentially disastrous consequences of failure to do so.

Learning How to Learn:
- Collaborate with individuals within, and external, to the course to work in small and large group settings to develop both broad and specialized knowledge of applied learning techniques to develop an ability to solve unique and complex problems.