

**NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
EGR 115 - ENGINEERING GRAPHICS (2 CR.)**

Course Description

Applies principles of orthographic projection and multi-view drawings. Teaches descriptive geometry including relationships of points, lines, planes, and solids. Introduces sectioning, dimensioning, and computer graphic techniques. Lecture 1 hour. Laboratory 3 hours. Total 4 hours per week.

General Course Purpose

Engineering graphics is the language that is used universally by engineers to describe the size and shape of structures and mechanisms. The course will enable the student to understand and use the engineering graphics language. The student will acquire traditional drawing skills as well as an introduction to the fundamentals of Compute Aided Drafting and Design (CAD) work. She/he will be able to read technical drawings, but not be a professional draftsman.

Course Prerequisites/Corequisites

None

Course Objectives

Upon completion of the course the student will be able to:

- Demonstrate knowledge of graphics communication through completion of technical drawing assignments
- Demonstrate the basic skills of sketching and annotations.
- Develop visualization techniques required to create two dimensional orthographic (2D) drawings from three dimensional (3D) objects using traditional board drawing techniques and/or CAD.
- Relate the basic concepts of descriptive geometry as applied to the graphical solution of engineering problems
- Develop good study habits and appreciation of the standards of accuracy, timeliness, and quality required in the engineering profession

Major Topics To Be Included

- Manual Single Stroke Gothic Lettering
- Sketching
 - Orthographic
 - Isometric
- C. Use of drawing instruments (no ink)
- D. Orthographic projection of points, lines, planes, and solids
- E. Section Views and Conventions
- F. Dimensions (Untoleranced and Toleranced)
- G. Working Drawings
- H. Introduction to Computer Aided Drafting and Design (CAD)

Extra Topics (Optional)

- Threaded Fasteners
- Descriptive Geometry Techniques, such as: determining the dihedral angle between two planes, rotation
- Assembly Drawings