# C-ID Descriptor
# Engineering Graphics

## Descriptor Details

- **Descriptor Title**: Engineering Graphics
- **C-ID Number**: 150
- **Units**: 3
- **Date of Last Revision**: 10/12/2017 11:44:08 PM GMT+0000

## General Description

This course covers the principles of engineering drawings in visually communicating engineering designs and an introduction to computer-aided design (CAD). Topics include the development of visualization skills; orthographic projections; mechanical dimensioning and tolerancing practices; and the engineering design process. Assignments develop sketching and 2-D and 3-D CAD skills. The use of CAD software is an integral part of the course.

## Prerequisites

Trigonometry (C-ID MATH 851)

## Corequisites

None

## Advisories

None

## Content

- Engineering Design
- Basic engineering drawing concepts
- Visualization skills
- Use of engineering/architect scales
- Multiview drawings
- Auxiliary Views
- Pictorial projections
- Section Views
- Dimensioning
- Tolerancing
- Threaded fastener terminology
- CAD:
    - 2D Construction and Editing Tools
    - 3D solid modeling
- Detail and Assembly Drawings
- Descriptive Geometry (optional)

## Lab Activities

- Engineering Design
- Basic engineering drawing concepts
- Visualization skills
- Use of engineering/architect scales
- Multiview drawings
- Auxiliary and Sectional Views
- Pictorial projections
- Dimensioning and Tolerancing
- CAD:
    - 2D Construction and Editing Tools
    - 3D solid modeling
- Detail and Assembly Drawings

## Objectives

*At the conclusion of this course, the student should be able to:*

1. Apply rules of orthographic projection to create multiview drawings.
2. Create pictorials from orthographic views.
3. Use CAD software to create:
    - 2D engineering drawings, including working drawings and assembly drawings.
    - 3D models and assemblies
4. Create auxiliary and section views of an object following correct conventions.
5. 5. Apply standards of dimensioning and tolerancing to engineering drawings.
6. Apply the engineering design process to a design project.

## Evaluation Methods

Assignments involving sketching and the use of CAD, quizzes, examinations, projects

*Note that not all of the methods listed are required.

## Textbooks

Bertoline & Wiebe; Fundamentals of Graphics Communications, 6th Edition; McGraw-Hill

Plantenberg, Kirstie, Engineering Graphics Essentials, SDC Publications

Raisor, E. Max, Engineering Graphics Principles with Geometric Dimensioning and Tolerancing, SDC Publications