

1. ***Department, number, and title of course***

Department of Technology, TECH 1303, Engineering Graphics

2. ***Required Course***

3. ***Course (catalog) description***

An introduction to engineering graphics techniques using computer aided drafting software. This course will cover CAD techniques in lines, arcs, editing, and dimensioning. Also included will be geometric constructions, three-view drawing, sectioning, and basic 3-D drawing.

4. ***Prerequisite(s)***

none

5. ***Textbook(s) and/or other required material***

AutoCAD and its Application – Basics - 2007, Shumaker/Madsen, Goodheart-Wilcox Publishing Company, ISBN: 1-59070-752-4, 2007.

6. ***Course Objectives***

- a. To gain skill using the AutoCAD system.
- b. To gain skill in ANSI standard drafting practices.
- c. To gain skill preparing working drawings.

7. ***Topics Covered***

- History of the Modern World
- Introduction to civil, mechanical, electrical engineering and computer science through labs and lab reports
- Design project, report, and presentation skills
- Study skills through the library as well as counseling center
- Technical report skills

8. ***Class/laboratory schedule, i.e., number of sessions each week and duration of each session***

LESSONS: 30@ 75 min (2 Att/wk)

LABS: none

9. ***Contribution of course to meeting the requirements of Criterion 5***

2.0 Credit Hours (ES=1.0, ED=1.0)

This is an engineering topics course that focuses on introducing the students to basic engineering graphics using the latest version of AutoCAD. Basic AutoCAD commands will be introduced and emphasized throughout this course. Development of technical drawing skills including: freehand sketching, text, orthographic projection, dimensioning, sectional views, and other viewing conventions. The course will proceed from the basics of sketching and CAD to their applications in preparing detail and working drawings.

10. ***Relationship of course to program outcomes***

The course director's assessment of how this course contributes to the civil engineering program outcomes is listed below. The following scale is used:

1=No Contribution; 2=Small Contribution; 3=Average Contribution; 4=Large Contribution; 5=Very Large Contribution

CIVIL ENGINEERING PROGRAM OUTCOMES	Course Director Assessment
Program Outcomes	
Students who qualify for graduation with a civil engineering major will demonstrate:	
Can apply knowledge of traditional mathematics to solve problems	2
Can apply knowledge of traditional science (calculus-based physics, Chemistry, additional science) to solve problems	1
Can apply knowledge of traditional engineering skills to solve problems	4
Can use modern engineering tools to solve problems	5
Can design and conduct experiments, as well as analyze and interpret data in more than one civil engineering discipline	1
Can design systems, components, and processes	1
Can recognize the strengths and areas for possible improvement of their creative designs	3
Can work independently as well as part of a multidisciplinary design team	3
Can identify, formulate, and solve engineering design problems using engineering models in the discipline of structural engineering	2
Can identify, formulate, and solve engineering design problems using engineering models in the discipline of transportation engineering	2
Can identify, formulate, and solve engineering design problems using engineering models in the discipline of construction management	2
Can identify, formulate, and solve engineering design problems using engineering models in the discipline of hydrology and hydraulic design	2
Can identify, formulate, and solve engineering design problems using engineering models in the discipline of environmental engineering	2
Can analyze a situation and make appropriate professional decisions	1
Can analyze a situation and make appropriate ethical decisions	1
Have effective oral, written, and graphical communication skills	4
Demonstrate a commitment to learning and continued professional development outside the classroom	1
Incorporate contemporary issues during problem solving	1
Determine the impact of engineering solutions in a global and societal context	1
Can explain professional practice issues	1
Can explain leadership principles and attitudes	1
Can explain management concepts and processes	1
Can explain concepts of business practices	1
Can explain public policy and public administration	1

11. *Person(s) who prepared this description and date of preparation*
Dr. Ronald W. Welch, PE, Professor, 10 April 2008.