Course Objectives and Outcomes
College of Science and Engineering

Department: Engineering
Course number: CE 1105
Course name: Engineering Graphics

Course Objectives:

A. Increase ability to communicate with people
B. Learn to sketch and take field dimensions.
C. Learn to take data and transform it into graphic drawings.
D. Learn basic Auto Cad skills.
E. Learn basic engineering drawing formats
F. Prepare the student for future Engineering positions

Course Outcomes:

1. Student’s ability to hand letter will improve.
2. Student’s ability to perform basic sketching techniques will improve.
3. Students will be able to draw orthographic projections and sections.
4. Student’s ability to use architectural and engineering scales will increase.
5. Students ability to produce engineered drawings will improve
6. Student’s ability to convert sketches to engineered drawings will increase.
7. Students will become familiar with office practice and standards.
8. Students will become familiar with Auto Cad two dimensional drawings.
9. Students will develop good communication skills and team work.

Course Objective (A): Increase ability to communicate with people.

Course outcome: (1) students ability to hand letter will improve.

Assignments: that demonstrate accomplishment of this outcome.

1. Students are required to turn in lettering templates for every class period to help improve their writing communication skills. Students are required to use the same writing techniques on their exams and other papers required from the course.

Course Objective (B): Students will be able to draw orthographic projections and sections.

Course Outcomes: Learn to take data and transform it into graphic drawings.

Assignments: that demonstrate accomplishment of this outcome.
1. Students are required to take objects and technical drawings from the technical manual and sketch and dimension them on grid paper.

**Course Objective (C):** Learn to take data and transform it into graphic drawings.

**Course Outcomes:** Students ability to produce engineered drawings will improve. Students ability to convert sketches into engineered drawings will increase.

**Assignments:** that demonstrate accomplishment of this outcome.

1. Students are required to go on a field project, take the dimensions of a predetermined project sketch them on engineering paper and transfer the data to an electronic drawing.
2. Students are required to take sketches and technical drawings from a technical drawing and convert them into cad drawings.

**Course Objective (D):** Learn basic auto Cad skills.

**Course Outcomes:** Students will become familiar with Auto Cad’s two dimensional drawings.

**Assignments:** that demonstrate accomplishment of this outcome.

1. Students learn how to operate Auto Cad and transform sketches and technical data into electronic drawings.
2. Students also produce an Auto Cad drawing from a field trip to collect data and produce an electronic drawing that is graded by a board consisting of the client and professional engineers.

**Course Objective (E):** Learn basic engineering formats:

**Course Outcomes:** Students will become familiar with office practice and standards.

**Assignments:** that demonstrate accomplishment of this outcome.

1. Students learn basic office practice and standards by learning basic drawing skills and dimensioning techniques. They learn basic welding symbols and their use. Additionally they learn basic drawing formats. They are tested on two exams that are focused on dimensioning and welding symbols.
**Course Objective (F):** Prepare the student for future Engineering positions:

**Course Outcomes:** Students will develop good communication skills and team work

**Assignments:** that demonstrate accomplishment of this outcome.

1. In the professional project, students are broken down into teams to work on a real life project and deal with real life clients. Students must go through the five stages of the design process to solve a real life project, culminating in a presentation to the client, with the client judging the students on their performance.

The instructor grades the students on the following:

a. Eight chapters in the technical manual
b. 25 chapters in the current Auto Cad manual
c. Lettering templates during the semester.
d. A midterm test on their Auto Cad abilities.
e. 3 tests that cover the chapters in the technical manual and auto cad manual
f. Attendance
g. Professional project that the client grades
h. Technical drawing data from the professional project.