

Name of Course: Computer Aided Drawing and Design 3

Purpose:

Computer Aided Drawing and Design 1 seeks to develop a student's ability to communicate through a formal system of symbols (technical drawing).

Method of Instruction:

The curriculum is addressed through a series of teacher guided lessons and demonstrations. The instructor will seek to engage students in drawing assignments meant to reinforce concepts critical to efficiency in technical drawing communication.

General Objectives:

At the conclusion of this curriculum, students will be able to:

- Prepare technical drawings in accordance to formal technical drawing rules
- Communicate through the use of manually generated two and three-dimensional representations.
- Communicate through the use of computer generated two and three-dimensional drawings.
- Define and utilize a variety of drawing styles.
- Simplify drawing technique through hand drawing and computer aided drawing.

Unit 1- Surface modeling in Computer Aided Design- Time 20 days

Goal:

- For students to gain skills necessary to become proficient in Computer Aided Design surface modeling.

Behavioral Objectives:

Students will be able to:

- Identify the commands: Ruled Surface, Revolved Surface, Tabulated Surface, and Edge Surface common to surface modeling.
- Imitate 3D surface modeling problems.

Unit 2- Materials and Rendering-Time 30 days

Goal:

- For students to develop their ability to accurately read and manually construct orthographic and isometric drawings.

Behavioral Objectives:

Students will be able to:

- Define materials relevant to engineering models.
- Utilize materials commands in animation program.
- Define rendering commands relevant to engineering models.
- Utilize rendering commands in engineering models.
- Define and Apply lighting techniques to engineering models.

Unit 3-Animation Techniques-Time 25 days

Goal:

- For students to develop skills necessary to efficiently construct and animate geometric models.

Behavioral Objectives:

Students will be able to:

- Evaluate the efficiency of a Computer Aided Design System/Animation program.
- Identify commands useful to animate a model in space and time.
- Utilize rendering, lighting, materials, and animation commands to construct a 3D animated engineering model.

Unit 4- Competitive Events- Time 30 days

Goal:

- For students to develop skills necessary to written communication through the use of a Computer Aided Design system.

Behavioral Objectives:

Students will be able to:

- Utilize Computer Aided Design system to effectively model a solution to the given problem.
- Utilize the Computer Aided Design system to effectively render a 3D model.

Unit 5- Drawing Application- Time 20 days

Goal:

- For students to apply proper drawing practices in industrial design.

Behavioral Objectives:

Students will be able to:

- Utilize proper drawing techniques to formulate a solution to a problem
- Construct hand and computer drawing that consider ergonomics in the solution's design.
- Utilize Computer Aided Design program to draw solid/surface models of solutions.
- Utilize Animation program to render and animate Computer Aided Design Model.

Assessment:

The assessment of student progress in the objectives cited on the previous pages will be primarily by, but not limited to, the following criteria:

Drawings	40%
Class Participation	40%
Tests/quizzes	20%

Homework, Extra Credit Policy:

Homework will not be accepted late. Extra credit will be given from time to time for extra effort or successful mastery of the behavioral objectives.

Special Course Policies:

A typical week in this course includes teacher guided instruction and demonstration. Students will also be given time to complete assignments alone or in groups.