

Engineering Design and Drawing

Course Guidelines and Goals
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Course Description

Engineers and technologists are people who use science and math to create things that advance society. This course will introduce you to the Design Process using drafting techniques and AutoCAD software. During this course, you will learn to create components and multi-part assemblies of *consumer products and mechanical devices* using the premier engineering drawing tool - AutoCAD. Hopefully, you come away from this course inspired to look at careers in mechanical engineering and product design.

The course is divided into two parts. First, you will learn the skills necessary to use drafting tools for precision hand drawing. We will practice hand sketching throughout the semester. Second, you will display proficiency in the basic operations of AutoCAD software. You will further develop your proficiency in AutoCAD by creating your own multi-part designs, according to design specifications. You will use the Design Process to create your designs.

By the end of this course, you will be able to:

1. *Conceptualize* and *draw* designs using orthographic, isometric and trimetric (opaque) views.
2. Use the necessary *literacy skills* to convey design ideas to your teacher and classmates.
3. Be able to *communicate* your design ideas using the vocabulary and terminology of design drawing and CAD.
4. Identify the components of the Design Process in a work in progress.
5. Apply the Design Process to a mechanical engineering problem.
6. Be able to display proficiency in the basic elements of AutoCAD software.
7. Use proper naming techniques to convey unique characteristics of a design.
8. Troubleshoot 2-D sketches using inquiry and discovery

Responsibilities

1. Be on time – if you are late for class, it will be noted and reported (demerits).
2. Respect – you must be respectful at all times.

Respect means:

No swearing or inappropriate language

No talking while another person is talking

No interrupting another person while they are working

No heads on desks

Raise your hand for help or questions

NO FOOD!!

Water (in a clear water bottle ONLY) is allowed - NOT IN THE COMPUTER AREA, HOWEVER!!

3. Have your assignments completed on time – **NO EXCUSES!!**

What to bring to Class

1. Notebook – in a three-ring binder or separate notebook *for this class*.
2. Pencils – bring more than one. Why?
3. A Flash Drive – if you “lose” your work, you will have to re-do it.
4. A great attitude!

Grading

Projects, Homework, Quizzes and Tests are graded on a point system. Some are worth 10 points; some are worth 100 points, depending on the importance and amount of material covered in the assignment.

Projects – 45%

Class Participation: 15%

Homework: 15%

Tests/Quizzes: 25%

Projects

Digital projects must use the filename formula *nameINL_CL_period*, where “name” is the project name (e.g. lego), INL is your initials, CL is the course abbreviation (e.g. PE), and period is the period of the day. ***THERE WILL BE AN AUTOMATIC 10% PENALTY IF THIS IS NOT DONE CORRECTLY!***

All component parts (with some exceptions – this will be clear for each assignment) must have your name on them in a discreet location to identify them as yours. If your name is not on a part, it will be graded as a “zero”

Homework will be accepted on the due date ***ONLY***. Half credit can be earned if the assignment is turned in after school. If you are absent on the day homework is due, it is your responsibility to turn in your homework on the next class day that you are in school.

Missed **quizzes** and **tests** must be made up within two days of returning to school, unless there are extenuating circumstances and approval of Mr. Brunelle.

I have read and understand the course expectations:

Student

Parent/Guardian