Introduction to Computer Aided Design

Course Guidelines and Goals
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Course Description

Everything that has not been created by nature has been designed by someone. Currently, most designs are, at some point, created using a *3-D Modeling* or *CAD* program. This course will introduce you to the Design Process using CAD (Computer Aided Design), specifically **Autodesk Inventor**. During this course, you will learn to create components and multi-part assemblies of *consumer products and mechanical devices.* Hopefully, you come away from this course inspired to look at careers in 3D modeling and design.

The course is divided into two parts. First, you will learn the skills necessary to hand sketch designs. We will practice hand sketching throughout the semester. Second, you will display proficiency in the basic operations of *Autodesk Inventor* CAD software. You will further develop your proficiency in *Autodesk Inventor* by creating multi-part designs from tutorials, and also from ideas of *your choosing*. 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 perspective 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 CAD/3-D Modeling.
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 and advanced elements of *Autodesk Inventor* software.
7. Use proper naming techniques to convey unique characteristics of a design.
8. Troubleshoot 3-D feature, sketch, and assembly issues using the Browser window.

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!!*
> *No waiting at the door!!*

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 – 60 %
Class Participation: 15%
Homework: 15%
Tests/Quizzes: 10%

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. CAD1), and period is the period of the day. ***THERE WILL BE AN AUTOMATIC 5% PENALTY IF THIS IS NOT DONE CORRECTLY!***

Work that is missing – ***NO MATTER THE REASON*** – must be made up. Students should purchase an 8 -16 GB ***FLASH DRIVE*** (about $10 at Staples, Walmart, Office Max) to use as a back-up for digital files that are created in class. If your work is missing due to BPS network problems, ***that is not an excuse for not turning it in***. ***YOU SHOULD BACK UP ALL OF YOUR FILES ONTO A FLASH DRIVE!!***

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/Mr. Alves.

I have read and understand the course expectations:

_____   _____
Student   Parent/Guardian