



Introduction To Engineering Design

Grand Haven High School



Course Number: I30
Grade Level: 9-12
Credits : 1
Prerequisite Courses : None

Course Description

Students use 3D solid modeling design software to create design solutions. Students study design concepts and use 3D printing technology to translate conceptual design into reproducible products.

Course Objectives

Students will learn the principles of engineering design and how to use the powerful 3D modeling capabilities of Autodesk Inventor. Tutorial based, hands-on, exercise-intensive approach to create and read engineering drawings and become proficient using common features of Autodesk Inventor. Complete design projects utilizing all steps in the engineering design process and find a solution that meets specific design requirements. 3D print a testable prototype of a design solution. Deliver visual presentation of a design solution.

Student Expectations

Be prepared, on time, and ready to learn when you enter the room. Be an attentive listener. Take notes because you want to. Own your words and actions. The launch, not the bell, will release you at the end of the hour.

Communication

casej@ghaps.org
616-850-6165
www.buccaneercad.wordpress.com

Assignments and projects are posted on my teacher blog. Considerable emphasis is placed on performance and due to the project nature of the course, assignments and projects are completed in class, with lab hours available after school or by appointment.

Building Behavioral Expectations

TEAM GH ... One Team, One Family, One Grand Haven. Be Kind. Always.

It is our expectation that ALL GHHS students, staff and parents will ... always give their best **EFFORT** in everything that they do, work hard to be **INCLUSIVE** of each other, show **RESPONSIBILITY** in class, the hallways, cafeteria and at events, and **WORK TOGETHER** at all times!

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Grading Policy

Assignments/Projects - 80%

Chapter Review Questions - 10%

Prezi Presentation - 10%

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|----|----------|----|----------|
| A | 93 - 100 | C | 73 - 77 |
| A- | 90 - 92 | C- | 70 - 72 |
| B+ | 88 - 89 | D+ | 68 - 69 |
| B | 83 - 87 | D | 63 - 67 |
| B- | 80 - 82 | D- | 60 - 62 |
| C+ | 78 - 79 | F | Below 60 |

Scope and Sequence

Autodesk Education Community

Parametric Modeling using Autodesk Inventor

Parametric Modeling Fundamentals

Constructive Solid Geometry Concepts

Geometric Construction

Feature Design Tree

Geometric Construction Tools

Orthographic Projection and Multiview Constructions

Dimensioning and Notes

Tolerancing and Fits

Pictorials and Sketching

Section Views and Symmetrical Features in Designs

Auxiliary Views and Reference Geometry

Threads and Fasteners

Working Drawings

Introduction to Stress Analysis

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