



# Engineering Design and Development

## Grand Haven High School



**Course Number:** I32

**Grade Level:** 10-12

**Credits :** 1

**Prerequisite Courses :** Introduction to Engineering Design

### Course Description

Project based second level engineering design course in which students research, design, and construct a solution to an engineering problem. Students create intermediate level parts, intermediate level assemblies, and various production drawings using 3D solid modeling design software.

### Course Objectives

Students learn intermediate to advanced feature-based parametric modeling concepts using Autodesk Inventor. Utilizing the activity-project-problem-based (APPB) teaching and learning pedagogy, students will perform research, validate, and justify a technical problem. After carefully defining the problem, teams of students will design, build, and test their solution. Student teams will present and defend their original solution. While progressing through the engineering design process, students will hone their creative and problem solving abilities, and their understanding of the design process.

### 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!

**GO BUCS**

## Grading Policy

Assignments - 80%

Capstone Project - 20%

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

Sheet Metal Designs

Assembly Modeling

Basic Motion Analysis

Inventor Studio

Reverse Engineering

Extreme Redesign Challenge

Presentations and Exploded Views

Weldment Design

Stress Analysis and Dynamic Simulation

Routed Systems

Plastics Design Features

Engineering Design Process

Capstone Project

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