Engineering Design

Grand Haven High School

Course Number: I18
Grade Level: 10-12
Credits: 1
Prerequisite Courses : Product Design

Course Description

Project based class where students learn how to design and build engineered solutions to product design problems using 3D Solid Modeling CAD software and advanced manufacturing equipment. Students receive Industry-Recognized Credentials and Certifications. The process and requirements for rapid prototyping are reinforced with hands-on practice. Design for manufacturing and assembly concepts introduced. This course is supported in partnership with SME PRIME.

Course Objectives

Design for manufacturability and assembly using 3D Solid Modeling. NC3 certification that includes hands-on training in Precision Measurement Instruments and Introduction to Mechatronics. Additive manufacturing using FDM and SLA 3D printing technologies.

Student Expectations

Be an attentive listener and active learner. Ask questions when something doesn't make sense, chances are you are not the only one with questions. This is a project-based class and you may need to spend extra time outside of class to complete assignments and projects. Come in during Academy, open lab hours after school, and/or by appointment. Students are responsible for technology and equipment used in class; abide by technology code of ethics.

Communication

casej@ghaps.org
616-850-6165
Google Classroom

Using Google Classroom, announcements, lessons, and assignments are posted and updated daily. Considerable emphasis is placed on student-centered activity, project, problem based learning.

Grading Policy

Assignments - 100%

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

Scope and Sequence

Welcome
Onshape CAD Software
Onshape Learning Center
Parametric Solid Modeling Projects
Design Challenges
Tooling U-SME
Tolerancing and Fits
Geometric Dimensioning and Tolerancing
Onshape Simultaneous Sheet Metal
Engineering Working Drawings
Designing for Manufacturability and Assembly
Lean Manufacturing
Reverse Engineering
Manufacturing Concepts and Principles
Manufacturing Day
Additive Manufacturing
Precision Measurement Instrumentation (PMI)
Engineering and Manufacturing Engagement Activities

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