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Advanced Engineering
          &
Computer-Aided Design
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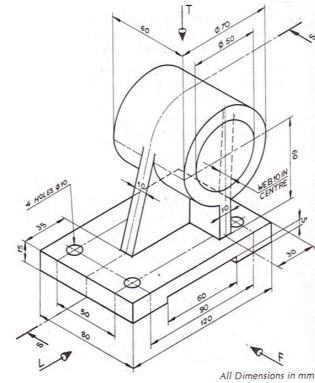
Mrs. Montroy
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Room 401
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Pembroke Jr/Sr High School
2023-2024 School Year

Course Description

This class is designed to expose students to a variety of computer design and advanced engineering content. A large part of the work completed in this class will be done collaboratively, exposing students to the nature of many engineering- and CAD-based work environments.

The units covered in this class are:

- Technology in Engineering: Basic
- Technology in Engineering: Advanced
- Design in Engineering: Small Scale
- Design in Engineering: Large Scale
- Project Management
- Construction
- Architecture
- Final Project

Objectives

By the end of the school year, students will be able to:
- Create advanced 3D objects in AutoDesk Inventor, several of these will be of their own design.
- Collaborate with their peers to contribute to different engineering design projects.
- Choose a hands-on Tech Wars event of interest and complete with their project at GCC's Tech Wars competition.
- Explore architectural and hydraulic engineering through self-guided projects.
- Create a how-to video for future students which showcases the process for creating a 3D object using a CAD program.

Required Materials

Students should come to class each day with the following items in order to be fully prepared for learning:
- Chromebook (school-provided)
- Binder
- (for some lessons) Earbuds or headphones

Attendance Policy

- Students must be on time to class or have a pass with them if they will be late. They will need to stay after class to discuss the situation further.
- Be prepared to participate in class discussions and activities.
- Missing class for a music lesson must be discussed with the teacher before the bell rings at the beginning of the period. Students are responsible for making up missed work due to a lesson.
- If a class is missed due to an absence, it is the students' responsibility to find out what was missed and make arrangements with the teacher to catch up.

Communication Protocols

Please refer to the contact information on the cover page. Any form of communication that students/parents are comfortable with works well. Also, please do not hesitate to contact the teacher with any comments, questions, or concerns that may exist. Communication is very much welcomed!

Electronic Device Policy

- All electronic devices are to be kept on the shelf or in backpacks (not in pockets) during class time unless otherwise specified by the teacher.
- Electronic devices may be confiscated at the discretion of the teacher as a result of misuse or distraction. Devices may be collected at the end of the school day (after 9th period).

Food and Drink Policy

- No food or drink shall be consumed in the 401 computer lab at any time.
- At the teacher's discretion, food and drink is permitted in the 403 shop area.
- This is a privilege for students. If any issues occur, the entire class will lose permission to eat or drink during class.

Grading Policy

The goal of this class is to display mastery of the given concepts, even if students need multiple attempts to achieve this level of understanding. Because of this philosophy, projects are always able to be re-submitted for grading, as long as submissions are made prior to the end of the grading period. Students will be required to meet briefly with the teacher to discuss the improvements that can be made to the previous work.

Total grades will follow a point system. Depending on the size and complexity of the task, a point value will be assigned appropriately. At the end of the quarter, total points earned will be divided by the total number of points possible and then multiplied by 100 to calculate final averages.