Reynolds High School

Exploring Computer Aided Design & Manufacturing

Instructor: Mr. McClellan

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Course Title: Exploring Computer Aided Design & Manufacturing

Required Textbooks/Materials: Will be provided in class

Course Description:

The course will teach students to use a problem-solving model to improve existing products and invent new ones. Using TinkerCad and Fusion 360—3-D parametric modeling software—students communicate the details of the products. Emphasis is placed on analyzing potential solutions and communicating ideas through various vehicles of communication. Understanding the terminology for the drafting/engineering industry and expanding fundamental skills in hand sketching (basic drafting) are both integral to this introductory course. Working in teams, you will learn about documenting your solutions, solving problems, and communicating your solutions to other students and members of the professional community of engineering and engineering design.

The course of study includes:

- Design Process
- Modeling
- Sketching
- Measurement, Statistics, and Applied Geometry
- Presentation Design and Delivery
- Engineering Drawing Standards
- CAD Solid Modeling

- Reverse Engineering
- Consumer Product Design Innovation
- Marketing
- Graphic Design
- Engineering Ethics
- Virtual Design Teams

Course Requirements:

The evaluation of projects will be on going and cumulative with the use of performance, engineering notebook, test, and self-report assessments. These assessments are check marks of how the students are meeting the standards set in the course and help direct the accomplishment of the project itself.

Project Assessment may include but is not limited to:

1. Presentation

2. Written/Oral Report

   - Engineering Notebook
   - Multimedia

3. Graphic Representation

   - Schematics
   - Sketches
   - Photos
   - Diagrams
   - Video Clips
   - Graphs and Charts
   - Statistical Analysis

4. Final Product

   - Constructed Models
   - Computer Models
   - Computer Simulations

5. Performance skills

   - Computer Applications (i.e., Word Processing, Spreadsheet, PowerPoint)
   - Measurement
   - Construction

Course Expectations:

- Be on time, participate, have a positive work attitude
- Come prepared (materials, homework, ready to learn)
- Be Attentive! Listen in class and try your best, and always take notes!
- Demonstrate respect for yourself, fellow students, your instructor, and classroom equipment

Extra Help: If you do not understand a particular topic, ASK questions in class, and come in for help immediately! Don't wait until it is too late!

End of Class:

1. Clean up after yourself – your desk and the floor around your desk

2. Return all materials to their proper places (this includes any books, classroom material, etc.

3. Close applications and log out of the computer

Grading Policy

<u>**Grades for this class will derive from the following sources:**</u>

Projects	**60 %**
Sketches, Worksheets, Engineer Notebook, Portfolio	**30 %**
Tests & Final Exam	**10 %**

Test Retake and Late Work Policy:

Late work will be accepted for up to two weeks from the due date without any penalty. If work is going to be turned in after this time frame you will need to meet with me and we will find an appropriate plan of action to get you back on track with the course. This is excluding the final exam, if for any reason you need to miss the final exam you must meet with me before the exam.

Parent Vue

Please take advantage of the Parent Vue option to track your student's progress.