

Course Name: Product Design

Course #: H7732 Grades: 11 – 12 Level: 0 Sem: 5X Credits: 2.5

Prerequisite: CADD II with a grade of “B” or better

Course Description:

This course provides students with the opportunity to bring to fruition the cumulative knowledge of all the previous course work in CADD by providing the vehicle for problem solving through creative design. Students will be challenged to design a product within given constraints with established timetables. They will follow the design cycle by engaging in research, sketching, evaluation, and production of a prototype. Students will give a final presentation using appropriate digital tools to communicate their research and process in developing their final product.

Course Proficiencies:

The following is a list of skills and concepts students will be proficient in upon successful completion of this course. These proficiencies form the basis of assessment of each student's achievement. Students who demonstrate understanding can:

1. Work collaboratively to support individual learning and contribute to the learning of others while developing an innovative solution to a real-world problem within a specific timetable. **(8.1.12.C.1, CRP 1-12)**
2. Develop a systematic plan of investigation to solve a real-world problem by synthesizing information from multiple sources and selecting appropriate digital tools to communicate findings. **(8.1.12.E.1, CRP 4,7)**
3. Design and choose appropriate resources to create a prototype to solve a real -world problem using the design process; identify constraints addressed during the creation of the prototype, identify trade-offs made, and present the solution to peers. **(8.2.12.D.1-3, SL.11-12.4, SL.11-12.5)**
4. Develop work related skills, as well as gain a better understanding of technological products, systems, innovative design and engineering principles to become productive and technologically literate society members. **(9.2.12.C.3, CRP 1-12)**
5. Continue to add to a portfolio of technical drawings and design projects that document the use of *Computer Aided Drafting* software in the engineering design process. **(8.1.12.A.1)**
6. Research an existing product, reverse engineer and redesign it to improve form and function. **(8.2.12.C.6)**
7. Document the design process through scaled drawings that include data and materials. **(8.2.12.C.5, 8.2.12.C.7)**

Assessment:

1. Teacher observation
2. Classroom participations
3. Performance Rubrics

Pending Curriculum Committee Approval – 02/11/2019

4. Project evaluations
5. Oral presentations

Board Adopted Text:

None