

Exploring Engineering II



Digital Design and CAD modeling

Course Curriculum

Power Objectives

P.O. #1: Develop employability skills, leadership and communication (P.O. #1 Proficiency Rubric)

P.O. #2: Apply the elements and principles of design and compositional techniques to create works of art and visual layouts for both tactile and digital art forms (P.O. #2 Proficiency Rubric)

P.O. #4: Interpret drawings and documentation and perform measurements (P.O. #4 Proficiency Rubric)

P.O. #5: Practice personal safety (P.O. #5 Proficiency Rubric)

Academic Vocabulary

- ☐ design process
- ☐ iteration
- ☐ technical drawing
- ☐ scale
- ☐ metric system

- ☐ CAD (computer aided drafting)
- ☐ measurement
- ☐ revision
- ☐ prototype

- ☐ model
- ☐ re-iteration
- ☐ teamwork
- ☐ collaboration
- ☐ communication

Enduring Understandings

Students understand that...

- CAD is the overriding method in which technical drawings are completed today.
- Technical drawings on CAD are determined by the skill of the person inputting the information.
- CAD systems allow for all work (successes, failures, and revisions) to be accomplished faster.
- Accuracy in drawings is the most important concern.
- It is a valuable skill for a person to be able to understand, critique, and evaluate their own, and another person's completed drawings.

Essential Questions

- When might it be a good idea to use traditional hand drawing methods rather than CAD?
- How can someone make sure that a drawing is accurately created?
- What are the advantages and disadvantages of using a CAD system?
- Why is accuracy such an important concern in CAD drawings and is there ever a time or situation when it is not so important?
- Why is it important for you to be able to understand and critique someone else's drawing as well as have someone do that your drawing?