



# Course Overview

High School | Technology Education | CADD I - Last Updated on April 3, 2025

## DESCRIPTION

### K-12 Content Area | Mission & Philosophy Statement

- Young people are born investigators, with natural curiosities about the physical, biological, and social worlds they experience. Anchoring science, technology, engineering learning in real-world phenomena connects curiosities to core conceptual understandings.
- Students actively construct understanding through inquiry, experimentation, and analysis to develop science and engineering practices such as asking questions, planning and carrying out investigations, and constructing explanations and models.
- Integration of crosscutting concepts such as patterns, cause and effect, and systems thinking promote interdisciplinary understanding and sense-making of the natural world.
- The design process is central to the modern world. Architects, Engineers, Drafters, and Designers utilize technical tools to prototype, manufacture, and collaborate in the development of new products.

### Course Description

This is an introductory course designed to familiarize students with basic drafting and CADD concepts. Students will learn the foundation content for drafting including object visualization, dimension standards and multi-view projection. Most of the focus of the course will be on learning and applying CAD software to solve technological problems. Students will have access to industry standard Autodesk drafting software in order to complete their assignments. CADD concepts covered will include 2D sketching and 3D modeling, generating working drawings and creating simple assemblies. Throughout the semester, students will have the opportunity to apply the design process to various projects as they develop custom solutions to given problems.

## STANDARDS

### Pennsylvania - Grade 10 - Science and Technology and Engineering

3.2.10.A6    3.4.10.A3    3.4.10.B1    3.4.10.C1    3.4.10.C3    3.4.10.D1    3.4.10.E4    3.4.10.C2

### Pennsylvania Common Core - High School - Mathematics

CC.2.1.HS.F.2    CC.2.2.HS.C.8    CC.2.2.HS.C.9    CC.2.3.HS.A.1    CC.2.3.HS.A.3    CC.2.3.HS.A.7

CC.2.3.HS.A.12    CC.2.3.HS.A.13    CC.2.3.HS.A.14    CC.2.4.HS.B.5

## COURSE OBJECTIVES

The objective of the course is to meet the performance expectations, science and engineering practices and cross cutting concepts outlined in the Science, Technology and Engineering standards.



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## ASSESSMENT TYPES

The following assessment types will be used during the course:

- Curriculum-based Measures
- Formative Assessments
- Performance-based Assessments
- Summative Assessments

## SUGGESTED METHODS OF INSTRUCTION

A technology education program demands the use of a variety of instructional strategies to foster design-based thinking. Below is a list of suggested strategies for high-quality instruction:

- Instructional components outlined in *The Framework for Teaching* by Charlotte Danielson
- Posing questions for investigation
- Cooperative learning and collaboration
- Inquiry, engineering, and design processes
- Developing models

## RESOURCES

District Approved Program Resources	District Approved Supplemental Resources	District Approved Technology Resources
	Sketch Paper Isometric grid paper Grid paper Pencils, erasers, rulers Drawing boards Drawing kit boxes Objects to draw	Autodesk Inventor 3D Printer Desktop Computers