



Course Overview

High School | Technology Education | Home Maintenance & Material Technology - 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 course will focus on the use of various materials for woodworking and construction projects. The importance of project planning, interpreting engineering CAD schematics to assist builds and the application of the design process will be incorporated on all major assignments. Students will complete projects individually and in small groups in the areas of structural creation, utility installation, heat transfer in residential structures and interior finish. Emphasis will be placed on safe laboratory work practices in terms of tool and machine usage.

STANDARDS

Pennsylvania - Grade 10 - Science and Technology and Engineering

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|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 3.4.10.A1 | 3.4.10.A2 | 3.4.10.A3 | 3.4.10.B1 | 3.4.10.B2 | 3.4.10.B3 | 3.4.10.B4 | 3.4.10.C1 |
| 3.4.10.C2 | 3.4.10.C3 | 3.4.10.D1 | 3.4.10.D2 | 3.4.10.D3 | 3.4.E | 3.4.10.E1 | 3.4.10.E2 |
| 3.4.10.E3 | 3.4.10.E4 | 3.4.10.E5 | 3.4.10.E6 | 3.4.10.E7 | | | |

Pennsylvania - Grade 9-10 - Reading for Science and Technical Subjects

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|---------------|---------------|---------------|---------------|---------------|---------------|
| CC.3.5.9-10.A | CC.3.5.9-10.B | CC.3.5.9-10.C | CC.3.5.9-10.D | CC.3.5.9-10.E | CC.3.5.9-10.F |
| CC.3.5.9-10.G | CC.3.5.9-10.H | CC.3.5.9-10.I | CC.3.5.9-10.J | | |



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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.

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



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RESOURCES

| District Approved Program Resources | District Approved Supplemental Resources | District Approved Technology Resources |
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| Projector Computer Lab Building materials Wire Electrical Fixtures Testing equipment Paint Spackle Calculators Hammers Squares Rulers Tape measures Hand planes Planer Jointer Radial arm saw Disk sander Mortise machine Band saw Table saw Lumber | | |