

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

COURSE DESCRIPTION

Course Title: Manufacturing Technology
Course Number: 00750
Course Prerequisites: Technological Design and Systems

Course Description: This course provides a broad overview of manufacturing as it relates to technology education and industry. Students will study this system of technology in a broad spectrum of industries/agencies. Students will participate in various laboratory activities as they identify and analyze products, services and processes. They will work individually and in groups to design, test, analyze and evaluate manufacturing processes and products. They will explore marketing and graphic design as it relates to product packaging. Projects beyond course expectations may require a materials fee.

Suggested Grade Level: Grades 9-12

Length of Course: One Semester

Units of Credit: .5

PDE Certification and Staffing Policies and Guidelines (CSPG) Required Teacher Certifications:

Technology Education CSPG 65

To find the CSPG information, go to [CSPG](#)

Certification verified by the WCSD Human Resources Department: ☒ Yes ☐ No

WCSD STUDENT DATA SYSTEM INFORMATION

Course Level: Academic

Mark Types: Check all that apply.

☒ F – Final Average ☒ MP – Marking Period ☒ EXM – Final Exam

GPA Type: ☐ GPAEL-GPA Elementary ☐ GPAML-GPA for Middle Level ☐ NHS-National Honor Society

☒ UGPA-Non-Weighted Grade Point Average

☐ GPA-Weighted Grade Point Average

State Course Code: Engineering and Technology -School Based Enterprise 21993; Technology Innovation and Assessment 21054

To find the State Course Code, go to [State Course Code](#), download the Excel file for SCED, click on SCED 6.0 tab, and choose the correct code that corresponds with the course.

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Board Approved Textbooks, Software, and Materials:

Title: Click or tap here to enter text.

Publisher: Click or tap here to enter text.

ISBN #: Click or tap here to enter text.

Copyright Date: Click or tap here to enter text.

WCSD Board Approval Date: Click or tap here to enter text.

Supplemental Materials: Pro/E software (available for free if teacher attends training)

Curriculum Document

WCSD Board Approval:

Date Finalized: 4/18/2024

Date Approved: 5/6/2024

Implementation Year: 2024-2025

SPECIAL EDUCATION, 504, and GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (IEP), Chapter 15 Section 504 Plan (504), and/or Gifted Individual Education Plan (GIEP).

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

SCOPE AND SEQUENCE OF CONTENT AND CONCEPTS

Marking Period 1

The World of Manufacturing	1 week
A Safe and Productive Workplace /Machine Safety	2 weeks
Producing Products	4 weeks
Quality Management	2 weeks

Marking Period 2

Custom Manufacturing Project	3 weeks
Mass Production Project	6 weeks

Marking Period 3

The World of Manufacturing	1 week
A Safe and Productive Workplace /Machine Safety	2 weeks
Producing Products	4 weeks
Quality Management	2 weeks

Marking Period 4

Custom Manufacturing Project	3 weeks
Mass Production Project	6 weeks

WARREN COUNTY SCHOOL DISTRICT

PLANNED INSTRUCTION

Standards/Eligible Content and Skills

Performance Indicator	PA Core Standard and/or Eligible Content	Marking Period Taught
Use various approaches to communicate processes and procedures for using, maintaining, and assessing technological products and systems.	3.5.9-12.A	MP1, MP2, MP3, MP4
Critically assess and evaluate a technology that minimizes resource use and resulting waste to achieve a goal.	3.5.9-12.B	MP1, MP2, MP3, MP4
Develop a solution to a technological problem that has the least negative environmental and social impact.	3.5.9-12.C	MP1, MP2, MP3, MP4
Evaluate a technological innovation that arose from a specific society's unique need or want.	3.5.9-12.F	MP1, MP2, MP3, MP4
Evaluate ways that technology and engineering can impact individuals, society, and the environment.	3.5.9-12.H	MP1, MP2, MP3, MP4
Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts	3.5.9-12.I	MP1, MP2, MP3, MP4
Develop a device or system for the marketplace.	3.5.9-12.M	MP1, MP2, MP3, MP4
Analyze and use relevant and appropriate design thinking processes to solve technological and engineering problems.	3.5.9-12.N	MP1, MP2, MP3, MP4
Apply appropriate design thinking processes to diagnose, adjust, and repair systems to ensure precise, safe, and proper functionality.	3.5.9-12.O	MP1, MP2, MP3, MP4
Apply a broad range of design skills to a design thinking process.	3.5.9-12.P	MP1, MP2, MP3, MP4
Implement and critique principles, elements, and factors of design.	3.5.9-12.Q	MP1, MP2, MP3, MP4
Conduct research to inform intentional inventions and innovations that address specific needs and wants.	3.5.9-12.S	MP1, MP2, MP3, MP4
Evaluate and define the purpose of a design.	3.5.9-12.U	MP1, MP2, MP3, MP4
Optimize a design by addressing desired qualities within criteria and constraints while considering trade-offs.	3.5.9-12.W	MP1, MP2, MP3, MP4
Implement the best possible solution to a design using an explicit process.	3.5.9-12.X	MP1, MP2, MP3, MP4
Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.	3.5.9-12.Y	MP1, MP2, MP3, MP4
Recognize and explain how their community and the world around them informs technological development and engineering design.	3.5.9-12.Z	MP1, MP2, MP3, MP4
Safely apply an appropriate range of making skills to a design thinking process.	3.5.9-12.AA	MP1, MP2, MP3, MP4
Assess how similarities and differences among scientific, technological, engineering, and mathematical knowledge and skills contributed to the design of a product or system.	3.5.9-12.BB	MP1, MP2, MP3, MP4

WARREN COUNTY SCHOOL DISTRICT PLANNED INSTRUCTION
--

WARREN COUNTY SCHOOL DISTRICT PLANNED INSTRUCTION
--

[illegible]

ASSESSMENTS

PDE Academic Standards, Assessment Anchors, and Eligible Content: The teacher must be knowledgeable of the PDE Academic Standards, Assessment Anchors, and Eligible Content and incorporate them regularly into planned instruction.

Formative Assessments: The teacher will use various assessment methods to conduct in-process evaluations of student learning.

Effective formative assessments for this course include:

- Peer Assessment
- Quizzes
- Teacher Observation
- Pre-assessments of prior knowledge (e.g., Entrance cards or KWL chart)
- Bellringers/Problems of the Day (PODs)
- Discussions
- Exit ticket
- Cooperative learning
- Written work
- Oral response
- Self-evaluation
- Summarizing

Summative Assessments: The teacher will use various assessment methods to evaluate student learning at the end of an instructional task, lesson, and/or unit.

Effective summative assessments for this course include:

- Documentation /Portfolio
- Project