Conneaut School District

Planned Course for: **Diversified Technologies** Date Revised: July 2000

Course Description:

9th Grade students will be exposed to a variety of technology experiences in the manufacturing and communications areas. The introduction of manufacturing systems will involve students in the different aspects necessary to understand how the manufacturing process works in the development of new products. Knowledge about materials, processes, management, automation and business organization will be covered in the manufacturing portion. In communications, students will be involved in the use of current drafting technologies and how it relates to manufacturing and construction methods.

Length of course: (X) Semester – Intensive Schedule ( ) Quarter ( ) Other _____

Type of Offering: ( ) Required ( ) Elective ( ) Selective _____

Credit: One

Prerequisite (s):

Goal(s):

- Help every student acquire the knowledge, understanding and appreciation of science and technology.
- Help every student acquire the knowledge, skills, manners and attitudes necessary to become a productive member of society.
- Help every student acquire knowledge and develop practices necessary to maintain physical and emotional well-being.

COURSE OBJECTIVES:

Students will be able to:

(1) The student will become familiar with the materials, machines and processes used to transform raw materials into consumable products (3.6A)
(2) Help students make informed educational and occupational choices (3.9B)
(3) Develop in each student a measure of skill in the use of common tools, materials and machines (3.6A)
(4) To discover and to develop creative technical talents in the students (3.5C)
(5) To provide prevocational experiences of an intensified nature for those students interested in technical areas of work (3.9B)
(6) To help each student make informed educational, occupational and consumer choices (3.9B)
(7) Develop safe work habits in the use of hand tools, machines and material handling (3.6A)
(8) The student will be able to identify common types of technical drawings and list traits necessary for success in a drafting career (3.5B)
(9) The student will be able to hand letter vertical Gothic letters and numerals and space them correctly.
(10) The student will be able to sketch the various types of lines, geometric shapes and use various methods of sketching and develop pictorial sketches (3.5C)
(11) The student will be able to identify the various drafting instruments and describe the use of each. The student will also be able to prepare accurate mechanical drawings to scale (3.5B)
(12) The student will be able to visualize an object and interpret it graphically through the use of various views and project details from view to view (3.5B)
(13) The student will be able to recognize the various types of pictorial drawings (3.5B)
(14) The student will be able to identify and use various systems of measurement (3.6B)
(15) To develop an understanding of technological and manufacturing systems and their components (3.8A)
(16) To become familiar with the various Research & development and manufacturing processes (3.5C)
(17) To become familiar with business and management organization (3.5C)
(18) To become familiar with development and use of automated manufacturing processes (3.6A)

Course Contents By Units: 90 Days (40 min. period)	Learning Strategies including Enrichments/Adaptations	Assessment Measures/Expected Levels of Achievement
Basic Drafting Tools and Supplies (2 days) • Drawing board • T-Square • Triangles • Scales • Letter guide • Dusting brush • Pencil grading • Eraser shield • Bow compass • Templates • Erasers **Lettering Technique (2 days)** • Lettering styles • Guidelines and spacing • Techniques **Sketching (3 days)** • Views • Materials • Line technique • Multiview • Pictorial • Steps to sketching	• Lecture • Demonstration • Discovery – Problem Solving • Cooperation Learning • Guided Practice • Discussion • Question / Answer • Word Search / Puzzles • Peer Tutoring • Technology • Project Construction • Individually Guided Instruction • Drawing • Note Taking	• Exams: Teacher Made – Standardized • Project Rating • Teacher Observation / Class Participation • Rating of Drawings • Student Activity Self Evaluation • Notebooks / Folders **Instructional Materials** • Text: Manufacturing Systems, Goodheart-Willcox, ©2000 • Student Activity Manual: Manufacturing Systems, Goodheart-Willcox, ©2000 • Tools, Machinery and Equipment • Visual Demonstrations • Video Tapes • Working Drawings • Resource People • Resource Materials • CD-ROM

Course Contents By Units: 90 Days (40 min. period)	Learning Strategies including Enrichments/Adaptations	Assessment Measures/Expected Levels of Achievement
Multiview Drawing (8 days) • Projection box • Six views • Types of lines • Choice of views • Locating views **Pictorial Drawing (5 days)** • Isometric • Oblique **Machine and Tools Related to Materials Processing (15 days)** • Safety • Setup and operation • Principles of Operation • Maintaining Tools and Equipment **Safety in the Workplace (2 days)** • Personal safety • Material handling **Industrial Materials (3 days)** • Types of materials • Properties of materials • Classification of materials • Calculating material costs • Purchasing materials **Manufacturing Systems (2 days)** • Technological systems • System components	• Lecture • Demonstration • Discovery – Problem Solving • Cooperation Learning • Guided Practice • Discussion • Question / Answer • Word Search / Puzzles • Peer Tutoring • Technology • Project Construction • Individually Guided Instruction • Drawing • Note Taking	• Exams: Teacher Made – Standardized • Project Rating • Teacher Observation / Class Participation • Rating of Drawings • Student Activity Self Evaluation • Notebooks / Folders **Instructional Materials** • Text: Manufacturing Systems, Goodheart-Willcox, ©2000 • Student Activity Manual: Manufacturing Systems, Goodheart-Willcox, ©2000 • Tools, Machinery and Equipment • Visual Demonstrations • Video Tapes • Working Drawings • Resource People • Resource Materials • CD-ROM

Course Contents By Units: 90 Days (40 min. period)	Learning Strategies including Enrichments/Adaptations	Assessment Measures/Expected Levels of Achievement
Research and Development Processes (3 days) • Finding ideas • Collecting data • Prototypes • Assembly drawings • Bill of materials **Manufacturing Processes (40 days)** • Separating • Assembling • Finishing **Introduction to Management (2 days)** • Company organization and structure • Managed product-centered activities • Managed support activities **Business Organization (2 days)** • Organizing • Financing • Marketing **Automated Manufacturing (3 days)** • Development • Computers and design • Computers and manufacturing	• Lecture • Demonstration • Discovery – Problem Solving • Cooperation Learning • Guided Practice • Discussion • Question / Answer • Word Search / Puzzles • Peer Tutoring • Technology • Project Construction • Individually Guided Instruction • Drawing • Note Taking	• Exams: Teacher Made – Standardized • Project Rating • Teacher Observation / Class Participation • Rating of Drawings • Student Activity Self Evaluation • Notebooks / Folders **Instructional Materials** • Text: Manufacturing Systems, Goodheart-Willcox, ©2000 • Student Activity Manual: Manufacturing Systems, Goodheart-Willcox, ©2000 • Tools, Machinery and Equipment • Visual Demonstrations • Video Tapes • Working Drawings • Resource People • Resource Materials • CD-ROM