TE.PRE. Pre-Engineering – Tuscarora and Oakdale HS

Essential Curriculum

Standard   **Indicator**

CAD
TE.PRE.10 – Describe the function of computer-aided drafting software and give an advantage
    TE.PRE.10.01 – Describe and demonstrate 2 ways to view a drawing using CAD software
    TE.PRE.10.02 – Demonstrate file storage and retrieval of CAD files
    TE.PRE.10.03 – Demonstrate the Grid, Snap, Hatch, and Array commands
    TE.PRE.10.04 – Set up multiple layers and line-types

Manufacturing Processes – CNC
TE.PRE.20 – Describe the function of a CNC machine and give an advantage
    TE.PRE.20.01 – Demonstrate ht nine basic steps to operate a CNC machine
    TE.PRE.20.02 – Demonstrate safe dress around a CNC machine
    TE.PRE.20.03 – Describe the function of the Z offset and program reference zero
    TE.PRE.20.04 – Demonstrate basic operation of a CNC machine

Quality Assurance
TE.PRE.30 – Define dimensional measurement and explain its importance
    TE.PRE.30.01 – Demonstrate the use of a variety of rulers
    TE.PRE.30.02 – Demonstrate conversion of measurements from US customary to SI metric

Automated Material Handling
TE.PRE.40 – Define a robot and explain advantages of using robots
    TE.PRE.40.01 – Describe the basic operation of a robot
    TE.PRE.40.02 – Demonstrate basic robot operation and speed control

Electrical Systems
TE.PRE.50 – Define electricity and give an application
    TE.PRE.50.01 – Describe the basic components of an electrical system
    TE.PRE.50.02 - Demonstrate safe and proper use of a circuit tester and voltage meter
    TE.PRE.50.03 – Demonstrate operation of a basic electric circuit

Design of Structures
TE.PRE.60 – Define Civil Engineering
    TE.PRE.60.01 – Describe three functions of a structure
    TE.PRE.60.02 – Design a stable structure

Mechanical Drives
TE.PRE.70 – Define a mechanism
    TE.PRE.70.01 – Describe three common types of mechanisms and their respective applications
    TE.PRE.70.02 – Define force, weight, and mass and their units of measure
    TE.PRE.70.03 – Define Hooke's law and its use
    TE.PRE.70.04 – Demonstrate the mechanical advantage of three types of levers

Pneumatics
TE.PRE.80 – Define pneumatics and give an application
    TE.PRE.80.01 – Describe the functions of basic components in a pneumatic system
    TE.PRE.80.02 – Demonstrate the use of basic components in a pneumatic system