

**MANUFACTURING SKILL STANDARDS COUNCIL
CERTIFIED PRODUCTION TECHNICIAN PROGRAM CURRICULUM
6 WEEKS, MONDAY – FRIDAY, 4 HOURS/DAY**

SAFETY MODULE

Production Teams

- Product Development
- Team Development
- Idea Generation
- Decision Making
- Customer Service

Training & Leadership

- Training
- Production Group Communication
- Production Team Roles
- Team Member Skills

Safety Organization

- Safety Responsibilities
- Safety Inspections
- Job Safety Analysis
- Emergency Preparedness
- Workplace Behavior

Personal Protective Equipment

- Eye/Face Protection
- Hearing Protection
- Hand and Foot Protection
- Head and Body Protection
- Respiratory Protection

Work Area Safety

- Ergonomics
- Platforms and Man Lifts

Fire and Electrical Safety

- Fire Safety
- Electrical Safety
- First Aid Procedures
- Accident Procedures
- Work Area Safety
- Housekeeping

Hazardous Material Safety

- Hazardous Materials
- Labeling
- Material Safety Data Sheet
- Handling and Storage
- Waste Management
- Lubricant Management

Tool and Machine Safety

- Machine Safety
- Lockout/Tagout
- Tool Safety
- Ladder Safety

Material Handling Safety

- Equipment Movement Introduction
- Rigging
- Cranes
- Powered Industrial Trucks



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QUALITY PRACTICES AND MEASUREMENT MODULE

Multi-view Drawings

- Introduction to Blue Print Reading
- Multiview Drawings
- Introduction to Basic Dimensioning

Sectional Drawings and Fasteners

- Advanced Dimensioning
- Sectional Drawings
- Fasteners
- Assembly Drawings

Geometric Dimensioning and Tolerancing

- General Tolerancing
- Assembly Tolerances
- Fundamentals of GD&T
- Feature Control Frames

Basic Measurement

- S.I. Measurement
- U.S. Customary Measurement
- Tape Measure
- Measurement Conversion

Precision Measurement Tools

- Dial Caliper
- Digital Caliper
- English Micrometer
- Metric Micrometer

Dimensional Gauging

- Introduction to Gauging
- Indicator Measurement
- Data Collection

Quality Systems

- Quality Systems
- Continuous Improvement
- Inspection
- Audits

Statistical Process Control

- Basic Statistical Concepts
- Histogram Construction
- Histogram Analysis

Control Charts

- Introduction to Control Charts
- X-bar and R Chart Operation
- Control Chart Setup
- Control Chart Analysis

Continuous Improvement

- Introduction to Quality Tools
- Brainstorming
- Pareto Diagram
- Preventive and Corrective Action



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MANUFACTURING PROCESSES AND PRODUCTION MODULE

Mechanical Principles

- Mechanisms Concepts
- Force Measurement
- Torque and Moments
- Levers and Mechanical Advantage

Mechanical Linkages

- Friction
- Inclined Planes
- Linkages
- Cams
- Turnbuckles

Machining Processes

- Introduction to Manufacturing Processes
- Selecting a Stock
- The Parts of the Band Saw
- Band Saw Safety

Machine Tooling

- Basic Layout
- Drill Press Safety
- Drill Press Tooling
- Drilling Holes

Machine Operations

- Reaming
- Countersinking
- Counter boring
- Tapping and Chamfering

Equipment Procedures

- Machine Setup and Operation
- Machine Malfunctions
- Machine Troubleshooting

Production Planning and Workflow

- Production Planning
- Production Documents
- Cost Estimating
- Productivity

Production Control

- Scheduling
- Inventory Management
- Production Effectiveness
- Packaging and Shipping



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MAINTENANCE AWARENESS MODULE

Basic Electrical Circuits

- Fundamentals of Electricity
- Electrical Circuit Components
- Manual Input Devices
- Output Devices

Electrical Measurement

- Voltage Measurement
- Introduction to Series and Parallel Circuits
- Current Measurement
- Resistance Measurement

Electrical Power

- Ohm's Law
- Power in Series Circuits
- Circuit Protection Devices
- AC Motor Connections
- Motor Circuit Components

Pneumatic Power Systems

- Introduction to Pneumatics
- Pneumatic Power
- Circuit Connections
- Basic Cylinder Circuits

Hydraulic Power Systems

- Introduction to Hydraulics
- Basic Cylinder Circuits
- Basic Motor Circuits
- Filtration

Lubrication Concepts

- Total Productive Maintenance
- Lubrication Concepts
- Oils
- Greases

Bearings and Couplings

- Mechanical Power Transmission Safety
- Introduction to Bearings
- Introduction to Couplings
- Gear Drives

Belt Drives

- Belt Drive Concepts
- V-Belt Operation
- Belt Tensioning
- Belt Tension Measurement

Chain Drives

- Chain Drive Concepts
- Chain Drive Operation
- Chain Tensioning
- Chain Tension Measurement
- Fixed Center Chain Installation

Machine Control Concepts

- Logic Elements (AND, OR)
- Logic Elements (NOT, NOR, NAND)
- Ladder Diagrams
- Electro-Pneumatic Solenoid Valves

Machine Automation

- Relay Operation
- Relay Applications
- Limit Switch Operation
- Time-Delay Relays

Welding

- Basic Welding
- Welding Safety



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