



Machine Tool Technology

Career Cluster	Manufacturing
Course Code	13203
Prerequisite(s)	Algebra 1 Recommended
Credit	0.5 or 1.0 credit
Program of Study and Sequence	Manufacturing Cluster Course – Machine Tool Technology – Advanced Machine Tool Technology – Capstone Experience
Student Organization	Skills USA
Coordinating Work-Based Learning	Guest speakers, project-based learning, community outreach, field trips, internships, and industry partnerships
Industry Certifications	National Career Readiness Certificate (NCRC), https://doe.sd.gov/CTE/documents/Industry-0221.pdf
Dual Credit or Dual Enrollment	https://sdmylife.com/images/Approved-CTE-Dual-Credit.pdf
Teacher Certification	7-12 Technology Education; Machine Tool; Manufacturing Cluster Endorsement; Welding & Precision Machining Pathway Endorsement
Resources	

Course Description

Machine Tool Technology students will demonstrate machining processes, safety, math skills, and machining operations. The goal is for the student to succeed at a basic level through building projects with various machining tools. This course is designed to introduce students to careers in the machine tool industry.

Program of Study Application

Machine Tool Technology is a pathway course in the Manufacturing cluster Machining pathway. This course follows a cluster course and is a prerequisite for Advanced Machine Tool Technology.

Course Standards

MT 1: Demonstrate knowledge of safety and essential academic concepts in machine tooling.

<i>Webb Level</i>	<i>Sub-indicator</i>
One Recall	MT 1.1 Demonstrate knowledge of machine shop operations and tool safety procedures consistent with Occupational Safety and Health Administration (OSHA) standards.
One Recall	MT 1.2 Introduce concepts of basic mathematics, mechanical drafting, science, tool terminology and communications used in machine tool processes.
Two Skill/Concept	MT 1.3 Demonstrate basic CNC programming and processes.

MT 2: Show proper machine use and functions, utilizing problem solving skills to resolve machining issues.

<i>Webb Level</i>	<i>Sub-indicator</i>
Three Strategic Thinking	MT 2.1 Demonstrate knowledge of tools, methods of measurement, materials, and material layout.
Three Strategic Thinking	MT 2.2 Set up and run lathe and milling machines to do basic machining operations.
Four Extended Thinking	MT 2.3 Demonstrate testing and problem-solving skills in basic lathe and milling setups and operations.

MT 3: Apply career readiness skills in the workplace as they relate to today's society.

<i>Webb Level</i>	<i>Sub-indicator</i>
One Recall	MT 3.1 Identify and demonstrate career readiness (soft skills) in the workplace.

MT 4: Machine tool technology career exploration and development.

<i>Webb Level</i>	<i>Sub-indicator</i>
Two Skill/Concept	MT 4.1 Define and compare career pathways in machine tool technology.
Four Extended Thinking	MT 4.2 Design a personal learning plan for career interest in machine tool technology.
Two Skill/Concept	MT 4.3 Explain trends and issues in machine tool technology careers.