

Machinist/CNC Technology, AAS

Academic Year 2024-2025

Program Description:

The CNC Specialist program provides students the opportunity to prepare for entry level careers as machinists using conventional equipment and computer control equipment.

The graduate will have completed fundamentals required for all machining careers – industrial safety, blueprint reading and precision measurement. Technical courses develop skills using conventional machines and using computerized manufacturing equipment.

Participants in the CNC Specialist program receive technical skills immediately useful in the workplace requiring CNC knowledge. They receive hands-on instruction in set up, operation, programming, maintenance, etc. on state-of-the-market CNC equipment used every day in industry. They also receive instruction in industrial communications, organizational skills, mathematics for machinists and safety.

Before graduation, each individual is required to pass all Level 1 NIMS CNC credentials.

The program adheres to the standards of the National Institute for Metalworking Skills (NIMS);

Career Outlook and Salary Forecast:

For the most current information please refer to the Bureau of Labor Statistics “Occupational Outlook Handbook” found at www.bls.gov/ooh/.

Program Outcomes:

- Demonstrate a safety attitude and conduct himself/herself in a safe way
- Apply mathematical skills appropriate to conventional machining
- Read and interpret blueprints
- Select and use correct measurement instruments
- Demonstrate the ability to properly use and care for conventional machining equipment
- Operate an engine lathe, vertical mill, grinder, saw, and a drill press
- Produce simple parts using conventional machining
- Demonstrate professionalism and responsibility in a work environment
- Identify grades of steel
- Provide rationale for feeds and speeds selected in projects
- Perform advanced operations on conventional machining equipment
- Produce complex parts with accurate measurements within allowable tolerances
- Develop and follow a process plan
- Apply knowledge and skill in fundamentals of machining to CNC machining
- Demonstrate mathematical skills appropriate for CNC machining
- Edit and write CNC program code using G and M code language
- Make work offsets and tool offsets
- Setup and execute projects on CNC Mill and CNC Lathe
- Produce complex parts using CNC equipment
- Operate a computer

Program Admission Requirements:

The CNC Specialist Program has admission and candidacy requirements in addition to the Mountwest Community & Technical College admission guidelines.

Employment Opportunities:

Contact Information:

Jill Goheen
Robert C. Byrd Institute
Phone: 304-781-1678 Email:
jill.goheen@mfg.marshall.edu

Mountwest empowers students to learn and lead in the community and in the workforce.

Machinist/CNC Technology - Major Code CM80

Name:	ID Number 942-
Educational Counselor:	
Faculty Advisor:	

COURSE	REQUIREMENTS	SEM	HRS	GR	SUBSTITUTE/REPEAT CRS	SEM	CR
Fall Term 1							
ENL 131	Technical Report Writing ¹	Fall	3				
MAT 135	Technical Math	Fall	3				
MT 105	Industrial Safety	Fall	2				
MT 121	Introduction to Machinery	Fall	6				
MT 200	Blueprint Reading, Precision Measurement & Inspection	Fall	4				
			18				
Spring Term 2							
MT 215	Metal Working Theory and Application	SP	6				
MT 233	NIMS Credentialing/Manual Machining	SP	6				
MT 241	Introduction to CNC Machining	SP	4				
			16				
Summer Term 3							
MT 244	CNC Set UP/Operations	SM	6				
MT 248	NIMS Credentialing/CNC Project	SM	5				
			11				
Fall Term 4							
	Restricted Elective (MT, MFE, WELD) ²	Fall	6				
COM 125	Interpersonal Communication	Fall	3				
IT 101	Fundamentals of Computers	Fall	3				
EC 102 or MG 101	Basic Economics or Intro to Business	Fall	3				
			15				
HOURS REQUIRED FOR GRADUATION: 60							

¹ ENL 131 has a prerequisite of placement in 100-level English or a co-requisite of ENL 095.

² Restricted Electives include:

- Choose any 6 hours from the following list:
- Any MT class not already included in the curriculum
- Any MFE course
- WELD 112 metallurgy
- WELD 115 Introduction to Welding

Successful completion of the first semester MT courses, students will be awarded a skill set for CNC Operator

Successful completion of the second semester MT courses, students will be awarded a skill set for Manual Machinist

Successful completion of the first and second semester including General Education, students will be awarded the certificate degree option

Successful completion of the summer term MT courses and MT 241 from prior spring term, students will be awarded a skill set for CNC Machinist.