PRECISION MACHINING TECHNOLOGY

CERTIFICATE PROGRAMS

Virtually all manufactured products depend on America's precision machining industry at some point during their production. As new technologies continue to shape the manufacturing industry, companies have an immediate demand for machinists with college-level skills. A precision machinist (PMT) works very much like a sculptor, transforming raw material into something of great value. Additionally, the one-year welding certificate is designed to provide entry level welding skills.

"I know that sitting in a classroom is not for me, but the PMT program was so much more. I did real things that were hands-on that gave me confidence to build real stuff. KVCC's PMT program was challenging but working in the lab was addictive. The better I got at making things, the more I wanted to do it."

What Precision Machining Technology graduates do:

- Remove metal with lathes, mills, and drills



Develop skills to design and make fine metal parts using computer numerical control machines



- Fabricate metal-based parts
- Use software to run CNC-based equipment
- Calculate and measure angles
- Design products to specifications
- Innovate better methods
- Observe and enforce safety procedures
- Maintain machines

Career Opportunities:

- Manufacturing plants
- Small businesses
- Fabrication plants
- Machine shops
- Automotive companies
- Technical training centers

For further questions about this program, please contact: kvccadmissions@mainecc.edu

PRECISION MACHINING TECHNOLOGY

Precision Machining Technology Operator Certificate

First Semester

BPT126*	Technical Print Reading & Sketching	3
PMT101*	Precision Machining I	7
PMT111*	Precision Machining II	7

Total Credits **17**

Precision Machining Technology Machinist Certificate

First Semester

BPT126*	Technical Print Reading & Sketching	3
MAT114*	Technical Math	3
PMT101*	Precision Machining I	7
PMT111*	Precision Machining II	7

Second Semester

ENG108	Technical Writing	3
PMT110*	Introduction to Master Cam	3
PMT125*	Geometric Dimensioning & Tolerancing	3
PMT201*	Precision Machining III	7

Total Credits **36**

CRITERIA FOR GRADUATION

Students in the Precision Machining Technology program must complete 36 credits for a Certificate, or 17 credits for an Machinist Certificate, and achieve a minimum grade of “C” in all core courses (*), and attain a final GPA of 2.0 or higher.



PRECISION MACHINING TECHNOLOGY

Certificate

DESCRIPTION

The Precision Machining Technology program offers a one-year Machinist Certificate, and a CNC Operator Certificate. Both offerings are stackable to allow a pace convenient to students. The program is designed to prepare traditional and non-traditional students for entry level positions.

Students will be trained in the conventional areas (lathe, mills, drills and grinders}, as well as in Computer Numerical Control (CNC). A working knowledge of the machinery's handbook will provide graduates the knowledge to be contributors in any environment they work. The curriculum will include both technical and general courses necessary for students to successfully compete in the work environment. A laptop computer with detailed specifications (other than a Mac) is required. Students will be using Mastercam CAD/CAM software extensively for creating CNC programs. 3D modeling software is used to design and build working models of projects. Class schedules are designed for students to earn while they learn. A combination of hands on, Hybrid, and online classes create an opportunity for tremendous earning potential while working within the industry. 100% job placement is normally obtained within the industry after successful completion.

PROGRAM MISSION

The Precision Machining Technology program is committed to providing the skills, knowledge, and understanding needed to obtain entry-level employment in the metal-products industry. Advanced fields such as programming, engineering, and management are all possible in this field.

The program provides communication skills and the ability to recognize the need for lifelong learning. Using high academic standards in a learning environment that is safe and supportive, the participant is expected to develop the necessary skills for a variety of occupations in the metal trades industry.

EDUCATIONAL OUTCOMES

Upon successful completion of the Precision Machining Technology program, a graduate is expected to:

1. Practice the skills needed to be successful in the metal working industry and to be safety conscious and accountable to himself/herself and the safety of others while expanding his/her knowledge in his/her chosen profession.
2. Communicate clearly and effectively while responding appropriately to a variety of processes common to the precision machining industry.
3. Be able to work with others and think as a team member to solve problems that could affect long- range outcomes of specific projects.

COLLEGE ADMISSION

General admission guidelines can be found on page 34 in the catalog.

The **Precision Machining** program technical standards have been developed to inform students of the nonacademic essential functions of the program and profession. Examples are not all inclusive.

Standard	Essential Function	Examples
Communication Oral / Written	• Skills sufficient to communicate information and ideas so others will understand	• Ability to convey information in a clear, professional, and timely manner • Listen and respond to others in an accepting and respectful manner
Mobility / Motor Skills	• Motor skills sufficient to n to set up and run manual and CNC machining equipment • Mobility sufficient to perform physical activities that require considerable use of arms and legs and moving the whole body • Ability to stand on hard or concrete floors for prolonged periods of time	• Move in confined spaces including walking, squatting, and lifting while maintaining balance • Maintain balance in standing position • Move body from one side to the other • Reach below the waist and to the front or the side of the body to the level of the top of head (i.e., adjust overhead lights, plug electrical appliance into wall outlet)
Physical Strength and Stamina	• Ability to participate in an activity for long periods of time • Ability sufficient to lift and carry at least 50 pounds	• Participate in project-related activity for up to six continuous hours • Lift and move building materials
Sensory **• Sight** **• Sound** **• Taste** **• Touch** **• Smell**	• Possess sufficient visual acuity to distinguish details from a distance and at a close proximity while wearing appropriate eye protection • Ability to access printed and electronic documents as well as reading gauges • Ability to tolerate loud noises • Ability to effectively hear sounds that indicate potential issues and problems in the machining environment. • Ability to effectively use a computer, keyboard/mouse, and a CNC controller • Ability to physically inspect parts for issues and quality • Ability to perform dexterous manipulative work • Ability to work with hands, being able to feel by touch, with finger dexterity • Ability to complete duties requiring stooping and bending.	• Ability to visually detect equipment displays • Ability to visually detect environmental hazards • Detect objects, symbols, and numbers both near and far • Detect and identify different colors • Detect audible sounds for equipment function and warning • Grasp, twist, squeeze, pinch, and manipulate equipment
Environmental / Occupational Exposure	• Possible exposure to extreme noise levels • Possible exposure to extreme weather • Possible exposure to dust, chemicals, and fumes	• Tolerate heat and humidity • Recognize and respond to hazardous conditions
Field or Industry Professional Standards	• Safely operate tools and equipment • Ability to maintain hygiene and dress requirements appropriate for a machining environment	• Wear personal protective equipment for safe practices (gloves, masks, eyewear) • Recognize and respond to hazardous conditions • Demonstrate impulse control and professional level of maturity. • Follow emergency procedures as needed