



Pine Technical &  
Community College

# Precision Machining

- Associate of Applied Science
- Diploma • Certificate

This sequence of programs is designed to provide students with the skills necessary to gain employment within the manufacturing industry. The program focuses on skills used in a modern machine shop. Machinist math, blueprint reading, conventional machine tool theory and lab, an introduction to Computer Numerical Control (CNC) and Computer-Aided Design (CAD) are covered in the first year. The second year offers specialized training in Computer-Aided Manufacturing (CAM) systems, quality concepts and CNC theory and procedures.

This two-year AAS degree has been designed to transfer credits seamlessly to Bemidji State University (BSU) if you wish to continue your education beyond PTCC.

## Recommended Course Sequence for Completion in 2 Years • 2023-2025

### ASSOCIATE IN APPLIED SCIENCE

#### Fall Semester 2023

♦ENGL 1277 Technical Communications or ♦ENGL 1276 College Composition .....	4
*MTTP 1208 Measuring Tools .....	1
*MTTP 1220 Blueprint Reading I .....	2
*MTTP 1245 Machining Fundamentals I .....	4
*MTTP 1256 Applied Machining Theory .....	3
*COCB 1201 Computer Concepts & Applications .....	2
<b>Total Credits</b> .....	<b>16</b>

♦These courses are not required to complete the requirements for the Precision Machining Certificate. They are required for the Diploma or AAS.

#### Spring Semester 2024

*MTTP 1241 Intro to Computer Aided Drawing (CAD) .....	3
MTTP 1265 Machining Fundamentals II .....	4
MTTP 1262 Blueprint Reading II .....	2
MTTP 1279 CNC Set-up & Operate .....	4
MTTP 2263 Quality in Manufacturing .....	2
WELD 1570 Metallurgy & Mech. Prop. of Materials .....	1
<b>Total Credits</b> .....	<b>16</b>

**Precision Machining Certificate Earned!**

#### Fall Semester 2024

MTTP 1261 Intro to Computer Aided Machining (CAM) ....	2
MTTP 1277 Machining Processes .....	2
MTTP 2255 CNC Programming .....	5
MTTP 2260 Cutting Tool Technology .....	1
Technical Elective .....	3
<b>Total Credits</b> .....	<b>13</b>

**Precision Machining Diploma Earned!**

#### Spring Semester 2025

MTTP 2290 Manufacturing Capstone or MTTP 2268 Machining Internship .....	3
*MATH 1260 College Algebra or MATH 1256 Mathematical Thinking .....	3
MN Transfer Goal Area 1 Elective .....	3
MN Transfer Goal Area 2-3 or Goal Area 6-10 .....	6
<b>Total Credits</b> .....	<b>15</b>

**TOTAL AAS CREDITS** ..... **60**

**Precision Machining AAS Earned!**

\*Check with our Transfer Specialist to determine if any knowledge or skills learned outside of the classroom may qualify for Credit for Prior Learning (CPL) college credit.

### Career Outlook

Most of the openings in this career will come through replacement of a record number of retiring personnel. Machinists in Minnesota earn a median salary of \$49,500. CNC machinists produce precision parts using computer-controlled lathes and milling centers and set up and operate a variety of machine tools, using their knowledge of the working properties of metals. Most CNC machinists work in small machining shops or in manufacturing firms that produce durable goods such as industrial machinery, or parts and components for manufactured products. CNC machinist positions are some of the most highly skilled and highly paid jobs in manufacturing.

**[www.pine.edu/apply](http://www.pine.edu/apply)**

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