



Pine Technical &  
Community College

# Applied Engineering Technology

## Associate of Applied Science

The 60 credit Applied Engineering Technology (AET) associate of applied science degree includes basic engineering principles, computer aided design, project management, industrial processes, production and operations management, and quality control. In PTCC's AET program, the student will be introduced to, and become efficient with computer aided design (CAD) software. Students will focus on building a foundation of knowledge in Statics, Kinetics, Machine Design, Manufacturing Processes, Automation and Metrology. They will be introduced to complimentary manufacturing functions such as basic machine shop, welding, and automation to provide them with the basic language and skills of these processes needed to make their designs a reality. Students will be able to develop both technical skills and soft skills by working on projects individually and within groups. These projects will simulate projects in industry and cover skills such as project scopes, timelines, system designs, project documentation, and manufacturability of designs.

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

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

### Fall Semester 2023

*MATH 1260 College Algebra .....	3
ENGL1276 College Composition .....	4
*MTTP 1241 Intro to Computer Aided Design (CAD) .....	3
AENG 1231 Material & Manufacturing Process .....	3
MTTP 1201 Basic Machine Shop .....	3
<b>Total Credits</b> .....	<b>16</b>

### Spring Semester 2024

AENG 1241 Introduction to Statics .....	3
AENG 1250 Applied Engineering Design Project .....	3
WELD 1501 Introduction to Welding .....	3
MnTC Goal Area 1 Elective .....	3
MnTC Goal Area 5 Elective .....	3
<b>Total Credits</b> .....	<b>15</b>

### Fall Semester 2024

AENG 2241 Advanced Computer Aided Design (CAD) .....	3
AENG 2210 Reverse Engineering .....	3
ETEC 2522 Fluid Power .....	2
ETEC 1550 DC Power & Basic Control Circuits .....	3
ETEC 1551 Programmable Logic Controllers I .....	3
<b>Total Credits</b> .....	<b>14</b>

### Spring Semester 2025

AENG 2220 Machine Design & Kinematics .....	3
AENG 2230 Manufacturing Project Management .....	3
AENG 2250 Applied Engineering Capstone .....	3
AENG 2212 Prototyping .....	3
MnTC Goal Area 5 Elective .....	3
<b>Total Credits</b> .....	<b>15</b>

**TOTAL DEGREE CREDITS** ..... **60**

**Applied Engineering Technology AAS Earned!**

## Career Outlook

Industrial engineering technicians apply engineering theory and principles to problems of industrial layout or manufacturing production, usually under the direction of engineering staff. They may perform time and motion studies on worker operations in a variety of industries for purposes such as establishing standard production rates or improving efficiency. Minnesota ranks as one of the five states with the highest employment level in Industrial Engineering. According to the Minnesota Department of Employment and Economic Development industrial engineering has a 5-star demand rating with an expected 2.3% growth rate over the next ten years.

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

320.629.5100 • 800.521.7463

\*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.