



<http://www.lcctc.edu>

Precision Machining

CIP – 48.0501

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QUESTIONS?

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Lebanon County Career and Technology Center

Mission Statement

The Mission of Lebanon County Career and Technology Center is to provide all students with quality career and technical education that prepares students for high skill, innovative, and in demand occupations to be career ready in a global economy.

Our Vision

The Vision of the Lebanon County Career and Technology Center is to lead the transformation and expansion of career and technical pathways, continuously improving and diversifying educational offerings, bridging the gap between evolving industries and skilled talent.

Precision Machining

Program Description: The Precision Machining program introduces students to the modern manufacturing industry and prepares them with the technical skills required to become successful machinists and manufacturing technicians. Students receive instruction in the safe use of hand tools, precision measurement tools, and manual machining equipment such as mills, lathes, and drill presses.

As students' progress through the program, they develop skills in Computer Numerical Control (CNC) machining, blueprint reading, precision measurement, and CAD/CAM programming used in today's advanced manufacturing environments.

The program is aligned with industry standards and prepares students for entry-level employment, post-secondary education, registered apprenticeships, and nationally recognized industry credentials such as NIMS (National Institute for Metalworking Skills).

Two Year Half-Day Program

Year One: 8:00am – 10:25am (36 weeks – 3 credits)

Year Two: 11:25am – 2:00pm (36 weeks – 3 credits)

Program Costs:

Students are required to purchase the following at an estimated cost of \$600.

- Uniform Shirts
- Uniform Pants
- Safety Boots
- USB Drives*
- 3 Ring Binder*
- Calculator TI-30XIIS*
- ANSI Z87.1+ Safety Glasses*
- 0-6 Calipers*
- 0-1 Micrometer*
- 6" Steel Rule
- Machinery's Handbook*

* For the 2026-2027 school year, the items marked are being covered by a grant. The student and parent must agree to the terms to receive the items. The items are on loan until the student graduates, at which point in time the tools become property of the student. Failure to complete the course requires the return of the items in the same condition they were received.

Program Competencies:

Students enrolled in the Precision Machining program will develop competencies in the following areas:

- Shop safety and safe machine operation
- Precision Measurement and Inspection Techniques
- Blueprint reading and technical drawing interpretation
- Mathematical calculations used in machining and manufacturing
- Manual machining operations including milling, turning, drilling, and tapping
- CNC machine setup and operation
- CAD/CAM programming and toolpath generation
- Cutting tool selection and machining processes
- Quality control and tolerance verification
- Manufacturing problem solving and process improvement
- Workplace professionalism, teamwork, and employability skills

Machining Tools and Equipment:

Students in the Precision Machining program will receive instruction and hands-on experience using industry-standard tools and equipment including:

- Precision measurement tools (calipers, micrometers, indicators, height gauges)
- Layout and inspection tools
- Engine lathes
- Vertical milling machines
- Drill presses and tapping equipment
- Surface grinders
- CNC milling machines
- CNC turning centers
- CAD/CAM software for CNC programming
- Tool holding systems and cutting tools
- Workholding devices including vises, chucks, and fixtures

Instruction emphasizes safe operation, machine setup, proper tooling selection, and precision part production within specified tolerances.

Career Opportunities:

Graduates of the Precision Machining program may pursue careers such as:

- CNC Machinist
- CNC Machine Operator
- CNC Setup Technician
- Precision Machinist
- Tool and Die Maker
- Manufacturing Technician
- Production Machinist
- Quality Control Inspector
- CAM Programmer
- Manufacturing Engineer (with additional education)

CTC Knowledge Transfers to College Credits for those who qualify at:

(www.collegetransfer.net select search and SOAR credits at the bottom)

- Butler County Community College- 9 Credits
- Delaware County Community College- 10 Credits
- Johnson College- 9 Credits
- Luzerne county Community College- 10 Credits
- Reading Area Community College- 12 Credits
- Thaddeus Stevens College of Technology- 11 Credits
- Westmoreland County Community College- 12 Credits

Dual Enrollment Opportunities at:

- Penn College of Technology
- Harrisburg University

Industry Certification Opportunities:

Students in the Precision Machining program may have the opportunity to earn the following industry-recognized certifications:

- NIMS (National Institute for Metalworking Skills) Machining Credentials
- OSHA 10 – General Industry Safety Certification
- Haas Mill Operator Certification
- Haas Lathe Operator Certification
- Immerse2Learn Machining Certifications
- Snap-On Precision Measurement Instrument Certification

These certifications help validate student skills and improve employment and post-secondary opportunities.

Grading Scale

The LCCTC grading system incorporates three components: competencies (skill— 33.3%), career skills (work ethic— 33.3%), and theory (knowledge—33.3%). Each academic class implements a performance evaluation/student grading system that incorporates career skills (work ethic), and theory (knowledge). Each component is weighted equally.

Please refer to the Student Handbook, available on the school website at <http://www.lcctc.edu> for a complete list of grading components.

Progress Reports

Students will receive a “Progress Report” each mid-quarter through the mail for any student with a 70% or less, and a “Report Card” will be given to each student at the end of each quarter. It is the student's responsibility to share this information with their parents/guardians. Both reports will utilize student performance data obtained from competencies, career skills, and theory grades.

Please Note: 40% is the minimum grade for the first 3 marking periods. However, students with excessive absences may be assigned an earned grade with administrative approval. There is no minimum grade for the 4th marking period.