

Precision Manufacturing Technology

rit.edu/ntid/nccc

Associate in Occupational Studies Degree

rit.edu/ntid/study/precision-manufacturing-technology-aos

Program Overview for Employers

The **Precision Manufacturing Technology (PMT)** program for deaf and hard-of-hearing students at Rochester Institute of Technology prepares students for careers in the precision machining and precision optics manufacturing industries. **Graduates are well qualified and prepared for jobs that include computer numerical control set-up, computer numerical control operator and programmer, general machinist, inspector, instrument maker, mold maker and tool maker, as these jobs apply to both the precision machining and precision optics manufacturing industries.**

Degree Awarded

Associate in Occupational Studies (AOS)

- 3 Starrett HB400 Optical Comparator
- 4 TESA Brown & Sharpe Electronic Height Gages

Cooperative Education (Co-op) Component Required

Students are required to complete one 10-week summer co-op session.

Computer Numerical Control (CNC) equipment

Students receive a full year of set-up, operation and programming instruction on:

Equipment and Facilities Metal Working Equipment

Students use precision machines common to industrial shop floors. They learn to set up, program and operate:

- 6 Bridgeport Series 1 milling machines with Prototrak SMX Conversational Control
- 1 Bridgeport Series 2 milling machine with Prototrak SM Conversational Control
- 1 Trak DPM 3 axis bed mill with Trak Conversational Control
- 2 Haas TL1 lathes with Conversational Control
- 4 Manual lathes with Digital Readout (Clausing, LeBlond)
- 1 Vertical band saw (DoAll)
- 6 x 12 Surface Grinders (Harig, Boyer Schultz)
- 1 Drill press
- 1 Mitutoyo Surftest SJ-20

- Hardinge VMC-600 three axis machining center (Fanuc 0i-MB control)
- 3 Haas Toolroom Mill TM1
 - 4 Axis and Axis 5 capability
- 1 HAAS TMP2P Axis capability
- 2 Haas TL1 CNC Toolroom lathe
- Fully Enclosed with tool turret and coolant
- 1 Sodick AQ300 CNC Wire Electrical Discharge Machine

Precision Optics manufacturing equipment

- 1 Optotech SM 80 CNC curve generator
- 1 Rogers & Clark spherical curve generator
- 1 Blanchard #11 rotary surface grinder
- 2 PR Hoffman double-sided planetary machines
- 1 Strasbaugh 4 spindle polisher
- 2X tabletop manual spherical grinders

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Precision Manufacturing Technology

Student Skills and Capabilities – Preparation for a Career

Students learn to use programs that include G and M code as well as G, D and T training. They can produce parts with linear and circular interpolation as well as numerous canned cycles and sub-routines. Students complete two trigonometry courses specially designed to solve complex machining problems.

PMT students qualify for various positions in the precision machine industry and the precision optics manufacturing industry. They are proficient at creating and examining 3D models and reading blueprints, lapping and polishing, and are skilled in the set-up and operation of lathes, milling machines, wire EDMs and grinders. Students receive extensive safety training and recognize safety as a top priority.

Selected Software Used to Develop Technical Skills

- AutoCad
- Fusion 360
- MasterCAM 2020
- Microsoft Excel
- Microsoft Windows
- Microsoft Word
- SolidWorks

Selected Technical Courses Leading to an Associate Degree

- Algebra
- Blueprint Reading I-II
- PMT I-V
- CNC I
- CNC II
- Industrial Materials
- Advanced CNC Concepts
- Precision Grinding
- Precision Measurement I
- Precision Optics MFG I-II
- Trigonometry for Coordinate Analysis

The following employers throughout the country have hired Computer Integrated Machining Technology students and graduates:

- Bausch & Lomb
- Caldwell Manufacturing
- Cryomech, Inc.
- General Electric
- Goodson Manufacturing
- Metalex Manufacturing, Inc.
- MWI, Inc.
- Parabit Systems, Inc.
- HDM Hydraulics, LLC
- Kennametal Inc.
- Solar Turbines
- Sydor Optics
- The Gleason Works
- Tobyhanna Army Depot
- Zip Products, Inc.

Contact us:

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