ADVANTAGES
The CNC manufacturing and machining program features instruction in the safe operation of all basic machine tools, such as lathes, milling machines, drill presses, various saws, and grinding equipment, as well as proper measurement and inspection of parts. Interpreting engineering drawings and mathematical calculations required by all machinists is also presented. The second year includes shop math and CNC (Computer Numerical Controls) programming with an emphasis on hands-on skills using advanced machine tools. The program includes operation of CNC lathes (turning centers) and CNC milling machines (machining centers). This includes set-up, as well as operation of the machines. Interpreting engineering drawings and control documents will also be emphasized. The understanding of quality control and how to conduct appropriate measurements and inspection will be integrated into the course work. The intent is to graduate someone with overall advanced machine shop skills.

PROGRAM STUDENT LEARNING OUTCOMES
- Demonstrate and apply safe operation of all machine tools.
- Student will be proficient in basic lathe operation.
- Student will be proficient in basic milling operation.
- Demonstrate mathematical operations using accepted mathematical applications.
- Demonstrate ability to perform advanced procedures on assigned projects.
- Student will be proficient in writing CNC programs for lathe.
- Student will be proficient in writing CNC programs for milling machine.
- Student will be proficient and apply GDT to all projects.
- Students will demonstrate ability to operate CNC equipment.
- Students will demonstrate all knowledge in capstone project.

OCCUPATIONAL OPPORTUNITIES
CNC programmers
CNC machinists
CNC engineers
Tool and die makers
Machine setters and operators
Machinists
Mold makers

DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM
Build on your associate degree to complete a bachelor's 100% online. Alfred State CNC manufacturing and machining graduates may enter directly into the technology management BBA degree program. Graduates who have credit for freshman composition, statistics, literature, history, and speech may complete the BBA program in two additional years; others may complete the BBA program in two-and-one-half years.

TECHNICAL STANDARDS
- Must be able to perform safely in the shop.
- Must be able to lift 50 pounds up to eye level.
- Must be able to communicate effectively with a person six to 10 feet away in a shop environment.
- Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to understand and retain information in service repair manuals and use diagnostic flow charts.
- Must be able to stand for long periods of time.
- Good eyesight is recommended.
CNC MANUFACTURING AND MACHINING (AOS)

TYPICAL FOUR-SEMESTER PROGRAM

First
MATT 1004 Basic Industrial Machining 4
MATT 1014 Industrial Machining I 4
MATT 1024 Industrial Machining II 4
MATT 1713 Reading Engineering Drawings 3
MATT 1913 Machinist Calculations I 3

Second
MATT 1234 Industrial Machining III 4
MATT 1244 Industrial Machining IV 4
MATT 1254 Industrial Machining V 4
MATT 1723 Reading Engineering Dwrgs II 3
MATT 1923 Machinist Calculations II 3

Third
MATT 3005 Intro to CNC Machine Program 5
MATT 3015 CNC Industrial Machining I 5
MATT 3025 CNC Industrial Machining II 5
MATT 3003 Geometric Dimensioning & Toler 3

Fourth
MATT 4005 CNC Industrial Machining III 5
MATT 4015 CNC Industrial Machining IV 5
MATT 4025 CNC Industrial Machining V 5
MATT 4003 Senior Project 3

GRADUATION REQUIREMENTS
A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average.

Students are required to have earned a minimum grade of “C” in MACH CALC. I & II, and in the MATT 4003 senior project. (Articulation is available in MACH. CALC. area.)

APPLICATION PROCEDURES:
☐ Complete the SUNY application (www.SUNY.edu/attend); current high school seniors should also complete the SUNY Supp Application form
☐ Indicate the following:
  ☑ Alfred State College code—91
  ☑ Special Campus Project code—NORTH
☐ Forward the additional required documents to the Alfred State Admissions Office (10 Upper College Drive, Alfred, NY 14802):
  ☑ Official high school transcript
  ☑ GED/TASC scores and diploma
  ☑ SUNY Supplemental Application or essay (topic of your choice although applicants are encouraged to share information on any related experience and/or reasons for interest in program)
  ☑ Official college transcripts if college course work was taken after high school graduation

Get the Alfred State ADVANTAGE
As an Alfred State Pioneer, you are on track for success.

You want to move ahead, make things happen, reach your goals, and start your career.

Through hands-on experience and applied learning you gain a head start.

With the Alfred State Advantage, you’re one step ahead and will Hit the ground running®…

PIONEER STUDENT QUOTE:
“I asked around and everyone that told me about Alfred State said it’s a really great college and that they enjoyed it. My dad came here and he enjoyed it. Plus, the machine tool technology program is the best of its kind that I have seen.” -Devin Hall

ENTRANCE REQUIREMENTS/RECOMMENDATIONS
Recommended: Algebra