

## Computerized Design and Manufacturing

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The Computerized Design & Manufacturing Department has two areas of study: machine tool technology and welding. Each program provides 1,800 hours of related course work, theory, and hands-on practice, providing graduates with the necessary skills and knowledge to be highly successful in these dynamic fields.

### MISSION

Strive to provide employers with entry-level technicians who are capable of functioning in and adapting to a rapidly changing environment.

### Technical Standards for Welding & Machine Tool

Applicants for the welding and machine tool programs in the Computerized Design and Manufacturing Department must meet the following physical requirements:

1. Must be able to perform safely in the shop.
2. Must be able to lift 50 pounds to eye level.
3. Must be able to communicate orally with a person between six and 10 feet away in a shop environment.
4. Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
5. Must be able to diagnose mechanical failures that are distinguished audibly.
6. Must be able to understand and retain information found in service repair manuals and use diagnostic flow charts.
7. Must be able to visually read an LCD display on welding equipment.
8. Must have the dexterity and mobility to weld in all the welding positions to meet all requirements.
9. Good eyesight is recommended.

Industrial internships are available to all students of the Alfred State Computerized Design and Manufacturing Department. Upon successful completion, appropriate college credit is applied to the student's record as applies.

Please refer to the most current required tool list on the Alfred State website at [www.alfredstate.edu/tool-lists](http://www.alfredstate.edu/tool-lists).

### FACILITIES

- **Machine tool labs** – This lab is equipped with lathes, mills, shapers, grinders, etc., and appropriate tools acquired from a \$1 million grant from the Gleason Foundation. The second-year machine tool technology program is located in an actual industrial setting, where students are instructed in the use of CNC machine tools, and may apply this knowledge in a shadowing experience in the host companies' facilities.
- **Sustainable Advanced Manufacturing Center** – This \$5 million, 16,000-square foot facility houses freshman and senior welding students and senior machine tool technology students, who train for in-demand jobs, while learning state-of-the-art sustainable practices in advanced manufacturing through more efficient processes. The building includes classrooms, a computer lab, a welding booth shop, a welding fabrication shop, material handling and preparation space, a CNC machine shop, and metrology and inspection space.
- **Welding shop** – The shop, established using a \$300,000 federal Appalachian Regional Commission grant, houses 20 individual welding booths with adjustable exhaust pickups. It contains industrial grade welders—TIG, MIG, Oxy-fuel, and arc—along with oxy-fuel and plasma cutters and hydraulic bend testers and grinders. In our senior welding lab, tools used in the fabrication industry will be used. This impressive facility is located adjacent to our machine tool center at a local industrial park.

### DEPARTMENT PROGRAMS

[Machine Tool Technology](#) (AOS)

[Welding Technology](#) (AOS)