



Catawba County Economic Development Corporation



Conceived as a community supported higher education effort in the technical and engineering discipline, the NC Center for Engineering Technology was established through a collaboration of business, government and higher education organized as the Future Forward Economic Alliance. The primary schools involved in the center are Appalachian State University, NC State University, Western Carolina University, University of North Carolina – Charlotte, Catawba Valley Community College, Caldwell County Community College and Technical Institute, and Western Piedmont Community College. The Center may collaborate with other schools in bringing the region the best programs to meet employment needs.

The NC Center for Engineering offers Bachelor degree programs in Building Sciences through Appalachian State University and Engineering Technology through Western Carolina University. A Master of Science in Technology is also offered through Western Carolina University. A number of degrees are offered on-line through partnerships with the University of North Carolina – Charlotte, Eastern Carolina University and North Carolina State University. Non-credit training in a variety of engineering topics is offered periodically (visit www.nccet.apstate.edu for more information).

The facility, located at 1990 Main Avenue SE, is 55,000 square feet of office, laboratory and classroom space. The portion of the building that has been remodeled for occupancy includes three classrooms, a distance learning classroom, a library, a large conference room, 12 offices and a student lounge and six labs including:

Metrology and Reverse Engineering Lab: Precision measurement and reverse engineering enable manufacturers to improve quality and reduce costs. This lab is equipped with rapid prototyping, precision measuring, laser cutting and laser scanning equipment. Products can be verified or reverse engineered in this laboratory. In addition the lab provides instrumentation for precision measuring data for Statistical Process Control.

Engineering Design Lab: This lab is equipped with 25 personal computers with 24" monitors. The computers have the most prominent PC based CAD system used in the US (AutoCAD®, SolidWorks®, and Pro/ENGINEER®). Students can create two and three-dimension products in files that can be sent to rapid prototyping or CNC programming equipment. Students will gain proficiency in drafting and design for conceiving new products and proving concepts.

Rapid Product Realization Lab: Using state-of-the-art 3-axis computer numerical controlled (CNC) metal processing equipment, this lab proves design concepts and production processes. The lab provides the latest in automated equipment for product realization and production. Sophisticated interfaces utilizing One CNC or similar software maximize efficiency of moving from concept to product.

Distance Education Lab: This lab is equipped with state-of-the-art multimedia equipment and provides two-way interactive streaming video interface with any compatible site in the world. With a seating capacity of 80, this lab supports baccalaureate education classes or specific training classes by linking to experts around the world.

Polymers Lab: This lab has equipment for plastics processing including: Vacuum/Thermal Forming, Injection Molding, Rotational Molding, Extrusion Molding Compression Molding, Ultrasonic Welding, Nortec Resin Drying and Blow Molding. Testing equipment including: Melt Flow Index, Moisture Content Analyzer, Instron Tensile Tester, Gardner Impact Tester, Brinell Hardness Tester, Rockwell Hardness Tester, Shore Hardness Tester, Qualtec Heat Deflection Tester, and an Izod Charpy Impact Tester.

Mechatronics Lab: This lab is not yet funded. Industries will be involved with academia in determining the most appropriate configurations of equipment for this lab.

Numerous companies have benefited from the following services provided by the NCCET facility, faculty and staff: CNC Machining, Fused Deposition Modeling, Laser Scanning, Model Making, Fixture Design/Fabrication, Polyjet 3-D Printing, Tensile Testing, Precision Measuring, Z-Corp 3-D Printing, Polymer Drying and Testing and Mold Analysis.