

Strategy for Investments in Support of Vermont Industry
Vermont Technical College

The recently adopted “*Vermont Comprehensive Economic Development Strategy 2020*” identified a number of priority sectors in which Vermont Technical College plays a substantial role. They included advanced manufacturing, health care, renewable energy, forest products, food systems, and green businesses, among others.

The proposed slate of investments will augment the ability of Vermont Technical College to support these and other Vermont industries, particularly those in advanced manufacturing.

Advanced manufacturing is part of Vermont’s economic legacy. Towns from Brattleboro to Winooski are filled with mill buildings that represent that legacy. In the 21st Century, advanced manufacturing works in Vermont because it “lends itself to smaller scale production, providing advantages for nimble management practices and requiring a workforce with well-integrated skill sets...”

The CEDS process has identified developing a skilled workforce as a key component of Vermont’s economic development system.

In 2013, the Advanced Manufacturing Partnership developed a set of recommendations for helping 21st century manufacturing activities thrive in Vermont, noted in the Advanced Manufacturing Report that this CEDS will carry forward for implementation.

According to the Final Report of the “Vermont Advanced Manufacturing Partnership,” these expectations underscore the importance of a dependable, skilled labor force, training in the latest technology, and continuous improvements throughout the manufacturing company. They also require investments not only by the manufacturers themselves, but also by the government (in technical assistance and infrastructure) and educational institutions (to train workers and sponsor research).

Engineering Technology (ET), also known as applied engineering, emphasizes problem solving, laboratories, and technical skills; it prepares individuals for application-oriented careers in industry, typically in manufacturing, field-service, or as technical members of the engineering team. To prepare students for a technical career requires a technical, applied education. Vermont Tech is a leader in applied learning methodology, getting students hands-on experiences with the technology used by industry leaders. Vermont Tech graduates have been called “plug and play” by employers for their unique ability to understand and implement technology from day one of their hiring. The ability of the college to maintain this level of excellence and support this industry going forward depends on its ability to maintain and upgrade the quality of its laboratory equipment. A comprehensive investment in our labs and learning spaces will allow us to do just that, driving economic advancement and opportunity for Vermonters and Vermont industry. Total Investment proposal: **\$2,463,400**

Vermont Technical College Advanced Manufacturing Lab

The long term vision is the development of a Center for Advanced Manufacturing that builds on Vermont Technical College’s employer partnerships across the state and positions the Vermont workforce as a source of competitive advantage for Vermont manufacturers. This slate of investments will start the college down that road.

The advanced manufacturing lab is used by majors in mechanical and manufacturing engineering technology. The state of the art lab equipment provides students with applied learning opportunities in design, testing and operations, gaining experiences on the same equipment that they will see in the testing areas and on the shop floors of most of our major employers, including GE-Aviation, GS Precision, GW Plastics, Renewable NRG Systems, and others.



CNC EDM, Wire	45,000.00	1 @ \$45000
CNC EDM, Sinker	25,000.00	1 @ \$25000
CNC Water jet	110,000.00	1 @ \$110000
CNC Plasma	35,000.00	1 @ \$35000
Horizontal Band saw	12,000.00	2 @ \$6000
CNC Lathe, Concept Turn 450	84,000.00	1 @ \$84000
CNC Lathe, Concept Turn 55	256,000.00	4 @ \$64000
Construction/Renovation/Fitup	180,000.00	1 @ \$180,000
CNC Tooling	120,000.00	12 @ \$10000
CNC Classroom Simulators	470,000.00	10 @ \$47000
Sensors	10,000.00	1 @ \$10000
Robot Arm	80,000.00	2 @ \$40000
Modular Rails & Fixtures	25,000.00	1 @ \$25000
Lab station PCs	45,000.00	
Computers	12,000.00	
Millermatic 252	41,400.00	
Lincoln	41,400.00	
Lincoln 172	34,200.00	
PAPR	18,000.00	
TOTAL	\$1,644,000.00	

Vermont Technical College Electrical Engineering Technology Lab

The electrical engineering technology lab provides students with applied learning opportunities in testing, operations and maintenance, gaining experiences on the same equipment that they will see in the most of our major employers, including IBM, UTC, Hypertherm, NRG Systems, and others.



Upgrade 2 labs to Virtual Workstations (16*10)	160,000.00	1 @ \$16000
Refurbish 3 labs, 8 stations each (3*8*8)	192,000.00	1 @ \$64000
Two 3-D printer W/scanner	7,200.00	1 @ \$3600
Two Pick & Place tools	20,000.00	1 @ \$10000
Two reflow ovens	10,000.00	2 @ \$5000
Eight robotic stations	100,000.00	1 @ \$1250
Upgrade lab chairs (6 labs, 16 chairs each)	28,800.00	16 @ \$300
Two Curve Tracers	80,000.00	2 @ \$40000
Graphene CVD tool	72,000.00	1@ \$72000
PCB Tool	30,000.00	1@ \$3000
ProtoMat Software	5,000.00	1@ \$5000
Total	\$705,000.00	

Vermont Technical College Civil and Environmental Engineering Technology Lab

The civil and environmental engineering technology lab is used by majors in architectural engineering technology, civil & environmental engineering technology and construction practice management. Students gain applied learning opportunities in testing and analysis, gaining experiences on the same equipment that they will see used by most of our major employers, including the Vermont Agency of Transportation, P & C Construction, Whiting Turner and others.



Multi-Purpose Flume	40,000.00	1 @ \$40000
Basic Hydraulic Bench	12,000.00	1 @ \$12000
GPS Units with RTK Capabilities	55,000.00	1 package@ \$55000
Pachometer	5,000.00	1 @ \$5000
Two Soil and Asphalt Sample Ejectors	1,200.00	2 @ \$600
Vane Inspection Set	1,200.00	1 @ \$1200
Total	\$114,400.00	