

Manufacturing Skills for
Connecticut:

Review of Connecticut River Academy's Early College Advanced Manufacturing Program



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Background

This program review report includes observations and key takeaways from data collected as part of the Manufacturing Skills for Connecticut (MSforCT) project and specific to the manufacturing program at Connecticut River Academy at Goodwin University. The report summarizes information gathered by WestEd between November 2020 and June 2021 through document reviews, surveys, and virtual site visits.

Manufacturing Skills for Connecticut Project Description ¹

Throughout Connecticut, significant gaps exist in the state's manufacturing workforce development system, most notably the dearth of comprehensive education, recruitment, and well-developed career pathways that, collectively, serve to connect industry to education. To address these issues [CONNSTEP](#), in partnership with [ReadyCT](#), the [Connecticut Business & Industry Association \(CBIA\)](#), and the Connecticut Manufacturers' Collaborative (CMC), designed the MSforCT project. The CMC includes all the major regional and statewide manufacturing member organizations across Connecticut, representing over 1200 manufacturing companies with tens of thousands of employees throughout all of Connecticut.

Funded through a grant from the U.S. Department of Commerce National Institute of Standards and Technology (NIST), the MSforCT project (2020-22) aimed to increase and improve career pathways to advanced manufacturing within the K-12 school system. To better understand which programs and models are most effective, remove the silos in which promising programs are operating, and share best practices, the project proposed to:

- complete a comprehensive inventory and analysis of manufacturing career pathway programs and initiatives across K-12 schools/districts;
- conduct program reviews of a subset of programs; and
- build a web-based repository of effective career pathway programs and key criteria for the creation of new programs. This interactive website will also serve as an online community of practice accessible to school districts, business associations, students and families, postsecondary institutions, and other stakeholders.

CONNSTEP contracted with [WestEd](#), a nonprofit educational research, development, and service organization, to conduct the comprehensive inventory and program review. This report summarizes only a portion of the data collected during the overall project period. Specifically, this report focuses on the engineering and manufacturing program at Connecticut River Academy, one of the 13 programs that were selected for program review, and includes information collected via a state-wide online survey conducted in January 2021 and a virtual site visit conducted in June 2021.

¹ Project description adapted from [ReadyCT's Manufacturing Skills for Connecticut webpage](#) and [Manufacturing Skills for Connecticut Project Abstract](#).

Connecticut River Academy's Early College Advanced Manufacturing Program (ECAMP)

Regional Information

The Connecticut River Academy at Goodwin University is a LEARN² Magnet High School with a state-of-the-art campus, located along the historic Connecticut River in East Hartford, within Hartford County³. This region offers a culture of business development, with internationally known companies in various sectors including insurance and financial services, aerospace, manufacturing, healthcare, and more. Top-tier educational institutions include UCONN, Trinity College, University of Hartford, Central Connecticut State University (CCSU), and University of St. Joseph⁴. Hartford County is home to 1,603 manufacturing sector employers⁵, with Capital Workforce Partners (CWP) serving as the workforce investment board for this region. Pratt & Whitney, Raytheon, and Stanley Black & Decker are amongst the industry leaders in this region.

District, School, and Program Overview

Connecticut River Academy is designated by the state as a college affiliated school with the official title of Connecticut River Academy at Goodwin University and is a part of the LEARN Regional Educational Service Center. In the 2019-2020 academic year, there were 2,518 students in the LEARN District. According to 2019-20 Edsight⁶ data, CT River Academy was 53% female and approximately 16% white. Of the students in the district, 8.1% identify as English learners (ELs), 73% qualify for free and reduced lunch, and 17% identify as students with special education needs. In the fall immediately following high school, 50% of students attended four-year institutions and 18% attended two-year institutions.

Connecticut River Academy's Early College Advanced Manufacturing Program (ECAMP) began in the 2018-2019 academic year. ECAMP is a dual credit model developed by Goodwin University that prepares students for careers in the field of advanced manufacturing. ECAMP brings together collegiate level preparation and partnership with school districts and industry partners across the greater Hartford region. This program prepares students for immediate entry into the workforce and provides pathways to advancing credentials and degrees.

Program Inventory Review

ReadyCT and WestEd worked together throughout fall 2020 to develop a comprehensive statewide inventory of K-12 Advanced Manufacturing Programs. To identify existing programs,

² LEARN Magnet Schools- [About LEARN](#)

³ CT River Academy- [About CT River](#)

⁴ Connecticut.gov- [Hartford Region](#)

⁵ Connecticut Department of Labor- [Labor Market Information](#)

⁶ Edsight - [Home](#)

WestEd used Google Forms and consulted with ReadyCT, the Connecticut State Department of Education (CSDE), and industry partners. At the end of the effort, the team had identified over 140 advanced manufacturing programs. A list of all programs identified can be found in Appendix A.

Survey and Site Selection Overview

WestEd researchers developed and disseminated an online survey to capture basic program data and inform the selection of programs to be reviewed.

Survey Development

The project team utilized several sources to develop a rubric to define high-quality, high-impact programs, including the Association for Career & Technical Education (ACTE)⁷, the Society of Manufacturing Engineers (SME) and SME Education Foundation⁸, the National Association of Manufacturers (NAM)⁹, and the U.S. Department of Labor, Employment and Training Administration¹⁰. Survey questions were then developed to mirror the rubric and focused on five broad categories:

- Curriculum Standards and Competencies
- Business and Community Partnerships
- Career Development Offerings
- Sequencing and Articulation
- Access and Equity

Survey Dissemination

WestEd administered an online survey to K-12 manufacturing programs from February 3, 2021 through March 12, 2021. A total of 47 schools responded providing information on 51 programs, representing a 33% response rate. A list of all survey respondents can be found in Appendix B.

Site Selection

The project team used a combination of survey responses, site demographics, and industry recommendations to identify the manufacturing programs that would be invited to participate in a program review of high-quality, high-impact manufacturing programs. Using the rubric created (see Appendix D) during the survey development phase, WestEd researchers scored and ranked each completed survey. A higher survey score indicated that, based on the rubric, the program was more closely aligned with elements of a high-quality, high-impact program. However, it is also important to note the limitations of this approach to identifying high-quality, high-impact

⁷ Association for Career & Technical Education (ACTE) - [12 Elements of a High-quality CTE Program of Study](#).

⁸ Society of Manufacturing Engineers (SME) & SME Education Foundation - [Four Pillars of Manufacturing Knowledge](#).

⁹ National Association of Manufacturers (NAM) - [NAM-endorsed Skills Certification System](#).

¹⁰ U.S. Department of Labor, Employment and Training Administration - [Advanced Manufacturing Competency Model](#).

programs. The primary limitations are that the programs were chosen among only a sample of manufacturing programs that completed the survey; not all surveys provided complete responses; and surveys were completed by respondents playing diverse roles with differing levels of programmatic knowledge. Thus, the sample from which the team identified high-quality, high-impact programs is limited by self-selection and the self-reported nature of the data source. It is possible that other manufacturing programs not responding to the survey are indeed high-quality and/or the programs chosen among the survey respondents provided incomplete or inaccurate information.

In addition to survey rankings, the research team considered ReadyCT's input as it further analyzed the program list. To ensure that the sample included variation, the project team considered region, urban-rural classification, and socioeconomic and diversity indexes to select a list of finalists that were eligible to participate in the program review. Finally, stakeholder feedback was incorporated into the project team's finalist list. The goal was to identify a group of sites that consisted of both programs of interest to the CMC and programs that were willing and able to participate in the evaluation. The final list of programs selected for review can be found in Appendix C.

Visit Overview

WestEd researchers conducted focus groups and interviews with stakeholders regarding Connecticut River Academy's (CT River Academy) Early College Advanced Manufacturing Program (ECAMP) during the weeks of June 11 and July 8, 2021. Due to the ongoing coronavirus pandemic and travel restrictions, the activities were held virtually using an online video conferencing system. The purpose of the focus groups and interviews was to gather information on program characteristics and activities to supplement data captured via the survey. Additionally, the focus groups and interviews provided an opportunity to gather information from key stakeholders about program strengths and challenges and solicited recommendations. The focus groups and interviews were tailored to stakeholders' roles as outlined below.

- An interview with the principal
- An interview with the program director
- An interview with a teacher
- An interview with a student
- A focus group with two counselors

Program Review Results

The sections below synthesize information gathered through the program's documents, survey response, and virtual site visit. The results are organized by the framework that most influenced the site selection rubric—the 12 areas of high-quality CTE that were developed by the Association for Career & Technical Education (ACTE).

Summary by 12 Areas of High-Quality CTE

Standards-aligned and Integrated Curriculum

CT River Academy is housed on the campus of Goodwin University in East Hartford, CT. The school's curriculum has a heavy focus on hands-on learning, computer numerical control (CNC) machining and quality, environmental science, and advanced manufacturing. CT River Academy's courses include, but are not limited to: Introduction to Manufacturing, Technical Drawing, CNC Machining, and Manufacturing Mathematics. State standards and International Technology Education Association standards are incorporated into the curriculum as well. A total of seven courses (21 credits) are required to complete the manufacturing program; there are no prerequisites required to enter the program. In addition to program related courses, all students participate in a Technical Study course. The Technical Study course is for students beginning the pathway. The goal of the course is to prepare students for both college and the workforce. The course is meant to build student skills and set expectations for behavior, work load, and academic environment. The curriculum also focuses on employability skills through lessons about collaborations, problem solving, critical thinking, communication, and leadership. Students are also able to improve their manufacturing math skills prior to taking the BMM 140 Manufacturing Mathematics Exam.

CT River Academy's program offers credit towards an associate degree, a Haas CNC Certification, and a pre-apprenticeship certificate of completion. The Connecticut River Academy at Goodwin University was named the 2020-2021 National Secondary Magnet School of Excellence by Magnet Schools of America and the 2020 National Magnet School of Excellence. CT River Academy is approved to offer a pre-apprenticeship program through the Connecticut Department of Labor.

Sequencing and Articulation

CT River Academy has an articulation agreement with Goodwin University that allows their students to gain college credit during high school. Additionally, CT River's program is designated as an early college program and offers a dual enrollment program. Courses are required to be taken in sequence; the first course of the sequence is offered in Grade 10.

Student Assessment

CT River Academy implements student assessments in multiple formats. Currently, the program utilizes Universal Design for Learning¹¹ (UDL) which allows students to choose the types of written exams they take during class from multiple exam formats. CT river uses UDL in their program because it is a scientifically based framework that works to allow all students equal access to learning with the goal of building expert learners. UDL is used because it is intended to be flexible enough to accommodate the difference in learners by providing flexibility.¹² In the past,

¹¹ Universal Design for Learning - [The UDL Guidelines](#)

¹² Goodwin University - [UDL Expertise](#)

faculty used the same assessments as Goodwin University but decided to amend exams to better suit their high school students. Observational assessments are also administered to monitor student process, progress, and learning outcomes.

Prepared and Effective Program Staff

The faculty at CT River Academy have extensive backgrounds in teaching as well as the technical trades. The program has two teachers and receives support with instruction from adjunct professors from Goodwin University. CT River requires that their program instructors have postsecondary degrees, industry-recognized licenses or certification and CTE training.

Teachers have many opportunities for professional development which includes district offerings and content-based training in manufacturing. This year's district-wide professional development focused on multi-cultural awareness. Teachers also attended development trainings on effective teaching with technology. Additionally, faculty receive training from Goodwin University's professors on the school's equipment and overall industry skills.

Engaging Instruction

Students have many opportunities to participate in project-based learning. CT River Academy's faculty incorporate acts of service into student projects to ground students in their community. In addition to crafting hand-made projects, students also do projects for the community. This year's projects included creating chicken coops to house chickens at a local farm, a community storage unit to store groceries for families in need, and shelving units for a lending library project. Additionally, through Magnet Schools of America funding, CT River Academy trains all teachers on how to integrate manufacturing themes into their respective courses; thus, allowing students to consistently engage with manufacturing content.

Access and Equity

Students enrolled in CT River Academy's program receive a wealth of supports. Faculty provide instruction based on student ability by applying a tiered approach to learning. Students with special needs are accommodated through personalized learning approaches such as automated reading, which allows students to have course materials read aloud to them. The program also equips students who speak English as a second language with apps and other technologies to enable and/or enhance communication.

Facilities, Equipment, Technology and Materials

CT River Academy has a newly constructed Advanced Manufacturing building with CNC mills, a CNC lathe, CNC routers, 3D printers, laser engravers, woodworking equipment, mechatronics equipment, and a CADD lab. Faculty described the facility as high quality and highly functional and stressed the many opportunities the facilities present students. CT River Academy receives an annual grant of \$500,000 from the Magnet Schools Assistant Program which funds its equipment and materials.

Business and Community Partnerships

CT River Academy's primary partnership is with Goodwin University. Local aerospace manufacturer Pratt and Whitney offers virtual expert learning sessions to scholars and faculty. In addition, Goodwin University has a partnership with ReadyCT. ReadyCT has supported the recruitment of high school students to the Early College Advanced Manufacturing Pathway (ECAMP). CT River Academy is in the process of developing partnerships with additional businesses. The program staff plans to survey local businesses, in coming months, to gauge their needs and interests in partnering. These partnerships will highlight career opportunities and improve opportunities for students.

Student Career Development

Job shadowing and internships are the top priority for expanding student career development opportunities. CT River Academy is in the process of developing relationships with local businesses to actualize these opportunities.

Career and Technical Student Organizations (CTSOs)

At the time of the site visit no Career and Technical Student Organizations existed at CT River Academy.

Work-based Learning

Prior to the pandemic, students were required to participate in job shadowing. However, job shadowing did not take place during the 2020-2021 academic year.

Data and Program Improvement

CT River Academy collects several student data points. Student demographics, grades, and postsecondary plans are all recorded as a part of the program's data collection. Data is tracked in Naviance and is used to inform professional development for staff and faculty by identifying student interests.

Final Reflections and Takeaways

CT River Academy's ECAMP program benefits heavily from its partnership with Goodwin University, and its extensive facilities. While the partnership has many strengths, it is still being constructed as the school and the university are still learning how to coexist and successfully blend high school, college, and industry.

Appendix A: Inventory of CT K-12 Advanced Manufacturing Programs, by District

Ansonia School District

Ansonia High School, Ansonia, CT

Berlin School District

Berlin High School, Berlin, CT

Bolton School District

Bolton High School, Bolton, CT

Bridgeport School District

Bassick High School, Bridgeport, CT

Bridgeport Regional Vocational Aquaculture School, Bridgeport, CT

Central High School, Bridgeport, CT

Fairchild Wheeler Interdistrict Multi-Magnet High School, Bridgeport, CT

Kolbe Cathedral High School, Bridgeport, CT

Warren Harding High School, Bridgeport, CT

Bristol School District

Bristol Central High School, Bristol, CT

Bristol Eastern High School, Bristol, CT

Brookfield School District

Brookfield High School, Brookfield, CT

Capitol Region Education Council

Academy of Aerospace and Engineering, Windsor, CT

Cheshire School District

Cheshire High School, Cheshire, CT

Clinton School District

The Morgan School, Clinton, CT

Colchester School District

Bacon Academy, Colchester, CT

Connecticut Technical Education and Career System (CTECS)

A. I. Prince Technical High School, Hartford, CT

Bristol Technical Education Center, Bristol, CT

Bullard-Havens Technical High School, Bridgeport, CT

E. C. Goodwin Technical High School, New Britain, CT

Eli Whitney Technical High School, Hamden, CT

Ella T. Grasso/Southeastern Technical High, Groton, CT

Emmett O'Brien Technical High School, Ansonia, CT

H. C. Wilcox Technical High School, Meriden, CT

Harvard H. Ellis Technical High School, Danielson, CT

Henry Abbott Technical High School, Danbury, CT

Howell Cheney Technical High School, Manchester, CT

J.M. Wright Technical High School, Stamford, CT

Norwich Technical High School, Norwich, CT
Oliver Wolcott Technical High School, Torrington, CT
Platt Technical High School, Milford, CT
Vinal Technical High School, Middletown, CT
W. F. Kaynor Technical High School, Waterbury, CT
Windham Technical High School, Windham, CT

Coventry School District

Coventry High School, Coventry, CT

Cromwell School District

Cromwell High School, Cromwell, CT

Danbury School District

Danbury High School, Danbury, CT

Darien School District

Darien High School, Darien, CT

Derby School District

Derby High School, Derby, CT

East Granby School District

East Granby High School, East Granby, CT

East Haddam School District

Nathan Hale-Ray High School, Moodus, CT

East Hartford School District

East Hartford High School, East Hartford, CT
Synergy Alternative High School, East Hartford, CT
Woodland School, East Hartford, CT

East Haven School District

East Haven High School, East Haven, CT

East Lyme School District

East Lyme High School, East Lyme, CT

Eastern Connecticut Regional Educational Service Center (EASTCONN)

Quinebaug Middle College, Danielson, CT

Ellington School District

Ellington High School, Ellington, CT

Enfield School District

Enfield High School, Enfield, CT

Fairfield School District

Fairfield Ludlowe High School, Fairfield, CT
Fairfield Warde High School, Fairfield, CT

Farmington School District

Farmington High School, Farmington, CT

Glastonbury School District

Glastonbury High School, Glastonbury, CT

Granby School District

Granby Memorial High School, Granby, CT

Greenwich School District

Greenwich High School, Greenwich, CT

Griswold School District

Griswold High School, Griswold, CT

Groton School District

Robert E. Fitch High School, Groton, CT

Guilford School District

Guilford High School, Guilford, CT

Hamden School District

Hamden High School, Hamden, CT

Hartford School District

Hartford Public High School, Engineering & Green Technology Pathway, Hartford, CT
Pathways Academy of Technology & Design, East Hartford, CT

Killingly School District

Killingly High School, Killingly, CT

LEARN

Connecticut River Academy, East Hartford, CT

Lebanon School District

Lyman Memorial High School, Lebanon, CT

Ledyard School District

Ledyard High School, Ledyard, CT

Madison School District

Daniel Hand High School, Madison, CT

Manchester School District

Manchester High School, Manchester, CT

Meriden School District

Francis T. Maloney High School, Meriden, CT
Orville H. Platt High School, Meriden, CT

Middletown School District

Middletown High School, Middletown, CT

Milford School District

Joseph A. Foran High School, Milford, CT
The Academy, Milford, CT

Milford School District

Jonathan Law High School, Milford, CT

Monroe School District

Masuk High School, Monroe, CT

Montville School District

Montville High School, Oakdale, CT

New Britain School District

New Britain High School, New Britain, CT

New Canaan School District

New Canaan High School, New Canaan, CT

New Haven School District

Metropolitan Business Academy, New Haven, CT
Riverside Education Academy, New Haven, CT

New Haven School District

Engineering - Science University Magnet School, West Haven, CT
Wilbur Cross High School, New Haven, CT

New London School District

New London High School, New London, CT

Newtown School District

Newtown High School, Sandy Hook, CT

North Stonington School District

Wheeler High School, North Stonington, CT

Norwich Free Academy

Norwich Free Academy, Norwich, CT

Old Saybrook School District

Old Saybrook High School, Old Saybrook, CT

Plainfield School District

Plainfield High School, Plainfield, CT

Plainville School District

Plainville High School, Plainville, CT

Plymouth School District

Terryville High School, Terryville, CT

Portland School District

Portland High School, Portland, CT

Regional School District 1

Housatonic Valley Regional High School, Falls Village, CT

Regional School District 4

Valley Regional High School, Deep River, CT

Regional School District 5

Amity Regional High School, Woodbridge, CT

Regional School District 7

Northwestern Regional High School, Winsted, CT

Regional School District 8

RHAM High School, Hebron, CT

Regional School District 10

Lewis S. Mills High School, Burlington, CT

Regional School District 12

Shepaug Valley School, Washington, CT

Regional School District 15

Pomperaug High School, Southbury, CT

Regional School District 16

Woodland Regional High School, Beacon Falls, CT

Regional School District 17

Haddam-Killingworth High School, Higganum, CT

Regional School District 18

Lyme-Old Lyme High School, Old Lyme, CT

Regional School District 19

E. O. Smith High School, Storrs, CT

Rocky Hill School District

Rocky Hill High School, Rocky Hill, CT

Seymour School District

Seymour High School, Seymour, CT

Shelton School District

Shelton High School, Shelton, CT

Simsbury School District

Simsbury High School, Simsbury, CT

Somers School District

Somers High School, Somers, CT

South Windsor School District

South Windsor High School, South Windsor, CT

Southington School District

Southington High School, Southington, CT

Stafford School District

Stafford High School, Stafford Springs, CT

Stamford School District

The Academy of Information Technology, Stamford, CT

Stonington School District

Stonington High School, Stonington, CT

Stratford School District

Frank Scott Bunnell High School, Stratford, CT

Stratford School District

Stratford High School, Stratford, CT

Suffield School District

Suffield High School, Suffield, CT

Thomaston School District

Thomaston High School, Thomaston, CT

Thompson School District

Tourtellotte Memorial High School, North Grosvenordale, CT

Torrington School District

Torrington High School, Torrington, CT

Trumbull School District

Trumbull High School, Trumbull, CT

Unified School District #1

State of Connecticut Department of Correction, Wethersfield, CT

Vernon School District

Rockville High School, Vernon, CT

Wallingford School District

Lyman Hall High School, Wallingford, CT

Mark T. Sheehan High School, Wallingford, CT

Waterbury School District

Waterbury Career Academy, Waterbury, CT

Waterbury School District

Crosby High School, Waterbury, CT

John F. Kennedy High School, Waterbury, CT

Wilby High School, Waterbury, CT

Waterford School District

Waterford High School, Waterford, CT

Watertown School District

Watertown High School, Watertown, CT

West Hartford Public Schools

Conard High School, West Hartford, CT

William H. Hall High School, West Hartford, CT

West Haven School District

West Haven High School, West Haven, CT

Westbrook School District

Westbrook High School, Westbrook, CT

Wethersfield School District

Wethersfield High School, Wethersfield, CT

Windham School District

Windham High School, Windham, CT

Windsor School District

Windsor High School, Windsor, CT

Windsor Locks School District

Windsor Locks High School, Windsor Locks, CT

Wolcott School District

Wolcott High School, Wolcott, CT

Woodstock Academy

The Woodstock Academy, Woodstock, CT

Appendix B: CT Advanced Manufacturing Program Survey Respondents, by District

Ansonia School District

Ansonia High School, Ansonia, CT

Bridgeport School District

Bassick High School, Bridgeport, CT

Bristol School District

Bristol Central High School, Bristol, CT

Bristol Eastern High School, Bristol, CT

Cheshire School District

Cheshire High School, Cheshire, CT

Colchester School District

Bacon Academy, Colchester, CT

Connecticut Technical Education and Career System (CTECS)

Bristol Technical Education Center, Bristol, CT

Bullard-Havens Technical High School, Bridgeport, CT

Eli Whitney Technical High School, Hamden, CT

H. C. Wilcox Technical High School, Meriden, CT

Harvard H. Ellis Technical High School, Danielson, CT

Platt Technical High School, Milford, CT

Vinal Technical High School, Middletown, CT

W. F. Kaynor Technical High School, Waterbury, CT

Coventry School District

Coventry High School, Coventry, CT

East Granby School District

East Granby High School, East Granby, CT

East Haddam School District

Nathan Hale-Ray High School, Moodus, CT

East Hartford School District

East Hartford High School, East Hartford, CT

East Haven School District

East Haven High School, East Haven, CT

Eastern Connecticut Regional Educational Service Center (EASTCONN)

Quinebaug Middle College, Danielson, CT

Glastonbury School District

Glastonbury High School, Glastonbury, CT

Griswold School District

Griswold High School, Griswold, CT

Hamden School District

Hamden High School, Hamden, CT

Hartford School District

HPHS Academy of Engineering & Green Technology, Hartford, CT

LEARN

Connecticut River Academy, East Hartford, CT

Lebanon School District

Lyman Memorial High School, Lebanon, CT

Madison School District

Daniel Hand High School, Madison, CT

Manchester School District

Manchester High School, Manchester, CT

New Britain School District

New Britain High School, New Britain, CT

Plainfield School District

Plainfield High School, Plainfield, CT

Plainville School District

Plainville High School, Plainville, CT

Regional School District 16

Woodland Regional High School, Beacon Falls, CT

Regional School District 8

RHAM High School, Hebron, CT

Rocky Hill School District

Rocky Hill High School, Rocky Hill, CT

South Windsor School District

South Windsor High School, South Windsor, CT

Stonington School District

Stonington High School, Stonington, CT

Suffield School District

Suffield High School, Suffield, CT

Thomaston School District

Thomaston High School, Thomaston, CT

Thompson School District

Tourtellotte Memorial High School, North Grosvenordale, CT

Torrington School District

Torrington High School, Torrington, CT

Unified School District #1

State of Connecticut Department of Correction, Wethersfield, CT

Wallingford School District

Lyman Hall High School, Wallingford, CT

Waterbury School District

Waterbury Career Academy, Waterbury, CT

West Hartford Public Schools

Conard High School, West Hartford, CT

William H. Hall High School, West Hartford, CT

Windham School District

Windham High School, Windham, CT

Windsor School District

Windsor High School, Windsor, CT

Appendix C: Final List of CT Programs Selected for Review

Bacon Academy Manufacturing at Bacon Academy Colchester School District, Colchester, CT
Bristol Manufacturing Production Pathway at Bristol Central & Bristol Eastern High Schools Bristol School District, Bristol, CT
Early College Advanced Manufacturing Program at Connecticut River Academy LEARN Regional Education Service Center, East Hartford, CT
Precision Machining Technology at Eli Whitney Technical High School Connecticut Technical Education and Career System (CTECS), Hamden, CT
Hamden Engineering Careers Academy at Hamden High School Hamden School District, Hamden, CT
Intro to Manufacturing at Lyman Hall High School Wallingford School District, Wallingford, CT
Manchester Public Schools Manufacturing Program at Manchester High School Manchester School District, Manchester, CT
Academy of Manufacturing, Engineering & Technology (MET) at New Britain High School New Britain School District, New Britain, CT
Manufacturing for Industry: YMPI with EWIB at RHAM High School Regional School District 8, Hebron, CT
Manufacturing Pathway at Tourtellotte Memorial High School Thompson School District, North Grosvenordale, CT
Precision Machining Technology at Vinal Technical High School Connecticut Technical Education and Career System (CTECS), Middletown, CT
Manufacturing Academy at Waterbury Career Academy Waterbury School District, Waterbury, CT
Career and Technical Education at Windsor High School¹³ Windsor School District, Windsor, CT

¹³ Windsor High School declined to participate in the program review.

Appendix D: Scoring Rubric

Category Name	Full Question	Response Required to Receive Point	Related High-quality CTE Program Element	Element-Weighted Score	Non-Weighted Score
Identified Student Populations	Has your program identified student populations in your vicinity that are typically underserved educationally or underemployed due to educational, economic or other barriers?	Yes	Access and Equity	0.3333333333	1
Identified Root Causes	Has your program identified the root causes of identified gaps in participation and performance of these student groups?	Yes	Access and Equity	0.3333333333	1
Orgs to Support Access & Equity	Has your program utilized any organizations and/or resources to support your efforts related to access and equity?	Yes	Access and Equity	0.3333333333	1
Business Partnerships	Is your program involved in any business partnerships?	Yes	Business and Community Partnerships	0.5	1
Community Partnerships	Is your program involved in any community partnerships (i.e., partnerships with nonprofit organizations, public agencies, and/or government offices)?	Yes	Business and Community Partnerships	0.5	1

Category Name	Full Question	Response Required to Receive Point	Related High-quality CTE Program Element	Element-Weighted Score	Non-Weighted Score
CTSOs	Has your school established one or more Career and Technical Student Organizations (CTSOs)?	Yes	Career and Technical Student Organizations (CTSOs)	1	1
Age: > 5 Years	Calculated age using starting year provided	> 5 Years	Data and Program Improvement	0.5	1
Program Data	Please describe the types of data the program collects and how data are used.	Response Provided	Data and Program Improvement	0.5	1
Specialized Facilities	Please describe any specialized facilities, equipment, technology, and/or materials available to program participants. Please provide any relevant website links or documentation.	Response Provided	Facilities, Equipment, Technology and Materials	1	1
Staff PD	Do program staff have opportunities to participate in professional learning activities specific to advanced manufacturing?	Yes	Prepared and Effective Program Staff	1	1
Sequenced Courses	Does the program structure require students to take courses in a SEQUENCE (e.g., Advanced Manufacturing Technology I, Advanced Manufacturing Technology II, Advanced Manufacturing Technology III, etc.)?	Yes	Sequencing and Articulation	0.3333333333	1

Category Name	Full Question	Response Required to Receive Point	Related High-quality CTE Program Element	Element-Weighted Score	Non-Weighted Score
Credentials	Which of the following industry-recognized credentials does your program offer?	At least 1 selected	Sequencing and Articulation	0.3333333333	1
Credit that Articulates	Which of the following opportunities to earn credit that articulates to the next level of education does your program offer?	At least 1 selected	Sequencing and Articulation	0.3333333333	1
Industry-Recognized Standards & Competencies	Does your program's curriculum incorporate industry-recognized technical standards and competencies (e.g., NIMS, AWS, MSSC, etc.)?	Yes	Standards-aligned and Integrated Curriculum	0.25	1
Employability Skill Standards	Does your program's curriculum incorporate employability skill standards, such as problem solving, critical thinking, teamwork, communications, interview skills, and workplace etiquette, that help students succeed in the workplace?	Yes	Standards-aligned and Integrated Curriculum	0.25	1
Publicly Available Standards	Are program standards publicly available and accessible?	Yes	Standards-aligned and Integrated Curriculum	0.25	1
Curriculum Reviewed Regularly	Is the program's curriculum reviewed regularly?	Yes	Standards-aligned and Integrated Curriculum	0.25	1

Category Name	Full Question	Response Required to Receive Point	Related High-quality CTE Program Element	Element-Weighted Score	Non-Weighted Score
Career Development	Which of the following career development opportunities does your program offer?	At least 1 selected	Student Career Development	1	1
Work-based Learning	Which of the following work-based learning opportunities does your program offer?	At least 1 selected	Work-based Learning	1	1
Total Possible Score:				10	19