

Manufacturing Skills for  
Connecticut:

# Review of Manchester High School's Manufacturing Program



---

---

## TABLE OF CONTENTS

Background	1
Manufacturing Skills for Connecticut Project Description	1
Manchester High School's Manufacturing Program	2
Regional Information	2
District, School, and Program Overview	2
Program Inventory Review	3
Survey and Site Selection Overview	3
Survey Development	3
Survey Dissemination	3
Site Selection	3
Visit Overview	4
Program Review Results	4
Summary by 12 Areas of High-Quality CTE	5
Standards-aligned and Integrated Curriculum	5
Sequencing and Articulation	5
Student Assessment	6
Prepared and Effective Program Staff	6
Engaging Instruction	6
Access and Equity	6
Facilities, Equipment, Technology and Materials	7
Business and Community Partnerships	7
Student Career Development	7
Career and Technical Student Organizations (CTSOs)	8
Work-based Learning	8
Data and Program Improvement	8
Final Reflections and Takeaways	8
Appendix A: Inventory of CT K-12 Advanced Manufacturing Programs, by District	9
Appendix B: CT Advanced Manufacturing Program Survey Respondents, by District	15
Appendix C: Final List of CT Programs Selected for Review	18
Appendix D: Scoring Rubric	19

---

---

## Background

This report describes Manchester High School's Manufacturing Program and is based on data collected for the Manufacturing Skills for Connecticut (MSforCT) project. An external evaluation team from WestEd completed data collection between November 2020 and July 2021 that included document reviews, surveys, and virtual site visits.

### Manufacturing Skills for Connecticut Project Description <sup>1</sup>

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 Manchester High School's Manufacturing Program, one of the 13 programs selected for program reviews, and includes information collected through a state-wide online survey conducted in January 2021, a virtual site visit conducted in May/June 2021, and a review of relevant program documents.

---

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

---

# Manchester High School's Manufacturing Program

## Regional Information

Manchester High School is located in the central part of the state, east of I-91, within Hartford County. 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. Joseph<sup>2</sup>. Hartford County is home to 1,603 manufacturing sector employers<sup>3</sup>, with Capital Workforce Partners (CWP) serving as the workforce investment board for this region. Pratt & Whitney and Stanley Black & Decker are amongst the industry leaders in this region. According to the most recent U.S. Census Bureau statistics, Manchester has an estimated population of 57,584, a median household income of \$74,503, with 9.6% of persons living in poverty<sup>4</sup>.

## District, School, and Program Overview

There are 6,309 students in the Manchester Public School district across 17 different schools or programs. According to 2019-20 data in Edsight<sup>5</sup>, the district of Manchester is 47.6% female and 33.7% white. Approximately 7.1% of students identify as English learners (ELs), 63.1% qualify for free and reduced lunch, and 17.1% identify as students with disabilities. Forty-two percent (42%) of students attend four-year institutions and 26% attend two-year institutions in the fall immediately following high school. Manchester is one of 33 Alliance Districts in CT; these are school districts with the lowest Accountability Index measures in the state<sup>6</sup>.

The Manchester Manufacturing Program is in the beginning phases of implementation. Having just begun in 2019, the program has experienced many delays, specifically related to work-based learning opportunities, due to the COVID-19 pandemic. However, the district had the opportunity to prioritize the purchase of materials and equipment which has led to the development of a strong manufacturing lab. In the 2021-22 school year, the district was also able to add three additional manufacturing courses to the sequence that are articulated with Manchester Community College (MCC). In spring 2022, the district will also begin busing a cohort of students to MCC to take the manufacturing process lab course.

---

<sup>2</sup> Choose Connecticut - [Hartford Region](#)

<sup>3</sup> Connecticut Department of Labor - [Employer List](#)

<sup>4</sup> United States Census Bureau - [QuickFacts](#)

<sup>5</sup> Edsight - [Home](#)

<sup>6</sup> CT.gov - [Alliance Districts](#)

---

---

## 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, 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 all identified programs to capture basic program data and inform the selection of programs to be included in site visits.

### 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)<sup>7</sup>, the Society of Manufacturing Engineers (SME) and SME Education Foundation<sup>8</sup>, the National Association of Manufacturers (NAM)<sup>9</sup>, and the U.S. Department of Labor, Employment and Training Administration<sup>10</sup>. 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

---

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

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

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

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

---

(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 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 from Manchester High School's Manufacturing Program from the end of June through early July 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 asked key stakeholders about program strengths and challenges and solicited recommendations. No students were interviewed due to the infancy of the program. The focus groups and interviews were tailored to stakeholders' roles as outlined below:

- A focus group with two teachers
- A focus group with the director of IT, director of STEM, and director of career and technical education and business partnerships
- A focus group with six business partners

## 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*

The manufacturing program at Manchester High School consists of four advanced manufacturing courses. These courses are: Blueprint Reading, Conventional Manufacturing Process Lab, Safety in the Workplace, and Computer-Aided Drafting and Design (CAD). The program also allows students to receive training and certification including Tooling U, Occupational Safety and Health Administration 10 Manufacturing Training (OSHA 10), and a pre-apprenticeship certificate. After completing these certifications, students are eligible to work on shop floors. The pre-apprenticeship program is composed of self-paced online modules while students in classes are learning how different machines work.

Manchester has a partnership with Manchester Community College (MCC) that allows students to receive credit at the college level during high school. Manchester High School determines the final curriculum; however, MCC gives the school a list of units for the courses eligible for MCC credit. It is up to the teachers to determine how students learn the material covered in these units. Eventually, the goal of the administration is to create a six-course sequence that will allow students to graduate high school with enough credits to be halfway toward an associate degree. This sequence would include a specialized math course to focus on teaching students how to code. Reviewing and revising the curriculum is a constant process. The school focuses on a different course review every year, so all curriculum is reviewed and revised regularly.

### *Sequencing and Articulation*

Any student can enroll in the manufacturing program's courses, which are within the STEM Academy, if they fit into the student's schedule. As noted above, Manchester has a strong relationship with the local community college, MCC. Additionally, the current three courses are all offered in partnership with MCC for college level credit. This partnership was formed to create a pipeline from the high school program into a higher education program, providing students with an incentive to continue with higher education after graduating from high school. There is also an opportunity to transfer these credits to other colleges and universities for credit towards a different degree. MCC has supported the school in determining the course sequence being offered in the manufacturing pathway as well as the order in which the courses are rolled out. Manchester's goal is to start busing students to the MCC campus in the spring of 2022 for the Manufacturing Process Lab Course. Currently, this course is being offered to students at Manchester High School.

---

---

### *Student Assessment*

Student assessment is a combination of various types of testing. Some include written assessments while others are project-based. Project-based assessments are focused on the execution of the manufacturing assignments. Students can retake assessments to improve their work before receiving their final grade. OSHA also has a multiple-choice assessment that students take to receive the OSHA certification, requiring a minimum passing score of 70%. Teachers do not use OSHA to guide their teaching or incorporate it specifically into their curriculum, but students have the option to access the materials online.

### *Prepared and Effective Program Staff*

There is currently only one educator in the manufacturing program. The teacher has opportunities to collaborate with other teachers in the school to discuss student learning. While there are external opportunities for professional development, recently they have been hard to find due to limitations associated with COVID-19. Teachers can request training that lead to MasterCam and SolidWorks certifications. The Mastercam certification is a set of tests that measure an individual's ability to work with the Mastercam software, overcome issues in today's shops, and produce finished parts<sup>11</sup>. The school also underwrites teacher participation in local welding and machining classes. Additionally, teachers can seek out additional professional development opportunities and request funding for them through the school.

### *Engaging Instruction*

Class sizes typically range from five to 20 students depending on the specific course. Teachers shared that they use both project-based learning and lecture style in their instruction. Classes start with a lecture to directly teach content before moving into project-based learning and allowing students the opportunity to work more independently.

Additional supports are provided for students who are identified as students with disabilities or English Learners (EL). Often, this support is provided outside the classroom as well as one-on-one within the classroom. Students are also given the flexibility to work at their own pace when needed. Faculty also support students by using translation services, such as Google Translate, to help when needed. EL teachers work with classroom teachers to make accommodations for EL students to allow them equitable access to the courses.

### *Access and Equity*

Students are recruited to the STEM academy and the manufacturing pathway in multiple ways, including through promotional materials and mass mailings. There are also information sessions that middle school students can attend during and after school to hear about the program and course opportunities. This allows students to learn about the program's opportunities prior to choosing a specific pathway.

---

<sup>11</sup> eMastercam - [Welcome to eMastercam](#)

---

Manchester recently received a supplemental grant to allow them to target disproportionately impacted students in their efforts to create an equitable curriculum. The administration recognized the demographics of the industry and therefore is working to provide greater access to manufacturing for all students. With this grant, teachers collaborated to write curriculum with an equity lens and have brought in consultants to work with teachers. There is also a focus on recruiting more female students.

### *Facilities, Equipment, Technology and Materials*

Manchester shared that due to the COVID-19 pandemic, they were able to spend more money on equipment than originally planned. Funds that would have been used for field trips were reallocated to equipment and technology for their manufacturing lab. The equipment was purchased with input from business partners.

The equipment includes computers equipped with MasterCam and SolidWorks, three 3-D printers, a computer numerical control (CNC) router, a bridge board, lay's routers, welding lathes, waterjet cutters, and simulators for Haas mini mills. In addition to this equipment, students have access to work benches, shop lockers, cabinet bases, and HP 15 Notebooks for CAD learners.

### *Business and Community Partnerships*

Due to the infancy of the manufacturing program, business and community partnerships are still being actively developed. The Director of CTE and Business Partnerships plays a significant role in the program development by attending meetings with business community organizations such as with the Chamber of Commerce and contacting businesses to discuss the manufacturing program at Manchester and the possibility of partnerships.

Manchester also has an advisory board made up of individuals across all industries in the community, including manufacturers. Many of the manufacturing business partners are just beginning to develop their relationship with the school district. Currently, students are not interning with business partners due to COVID-19 restrictions. However, partners communicate regularly with the Manchester administration about the qualities they are seeking in their employees. Some of these qualities include being responsible, organized, motivated to learn, detail-oriented, having a strong math background, and work ethic.

### *Student Career Development*

Manchester has a specific course titled, Experiential Learning, to help students develop employability skills taught by the extended learning coordinator. The purpose of this course is to support students in their development of communication and presentation skills as well as to work on resumes and cover letters. Students across all pathways are all able to take this course together. In this course, students work on interview preparation and learn about workplace/safety rights. The materials students prepare and the skills they develop are designed to match their potential career of interest.

---

### *Career and Technical Student Organizations (CTSOs)*

There are currently no manufacturing Career and Technical Student Organizations (CTSOs) at Manchester High School. Manchester is in the process of establishing these organizations in the coming years of the manufacturing pathway. One of the CTSOs that Manchester is considering is SkillsUSA<sup>12</sup>. Also, Central Connecticut State University has a program entitled, Go Baby Go<sup>13</sup>, which allows CTE high school students to design and manufacture little cars for children with disabilities. There are CTSOs at the school that are not related to manufacturing and include Future Business Leaders of America and Health Occupations Students of America.

### *Work-based Learning*

Currently, few students are involved in work-based learning experiences due to the COVID-19 pandemic. Those that are involved are primarily happening internally such as in the school based store, restaurant, and through IT internships. However, Manchester is building relationships with business partners with the hopes of establishing job shadowing and internship opportunities in the future. These opportunities may occur during the school year or over the summer. To prepare students for these opportunities, Manchester is working to expose students to equipment in school that they will likely see in future worksite placements.

### *Data and Program Improvement*

There is currently no formal process for data collection in the school regarding the manufacturing program. Administration currently tracks disaggregated data related to course enrollment, participation, and program completion. The school uses this data to influence marketing efforts and program improvement.

## **Final Reflections and Takeaways**

The program at Manchester is still relatively new and had to undergo many changes to function during the COVID-19 pandemic. The administration is still working to grow the program by focusing on creating work-based learning experiences and forging partnerships with local business partners. Although COVID-19 hindered the ability of students to gain field experience, it allowed the school to invest in equipment and to add three additional courses articulated with MCC. There is an effort to increase student interest and change student mindset allowing more to see manufacturing careers as accessible and rewarding.

---

<sup>12</sup> SkillsUSA - [About](#)

<sup>13</sup> Cerebral Palsy Foundation - [Go Baby Go](#)

# 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

<b>Bacon Academy Manufacturing at Bacon Academy</b> Colchester School District, Colchester, CT
<b>Bristol Manufacturing Production Pathway at Bristol Central &amp; Bristol Eastern High Schools</b> Bristol School District, Bristol, CT
<b>Early College Advanced Manufacturing Program at Connecticut River Academy</b> LEARN Regional Education Service Center, East Hartford, CT
<b>Precision Machining Technology at Eli Whitney Technical High School</b> Connecticut Technical Education and Career System (CTECS), Hamden, CT
<b>Hamden Engineering Careers Academy at Hamden High School</b> Hamden School District, Hamden, CT
<b>Intro to Manufacturing at Lyman Hall High School</b> Wallingford School District, Wallingford, CT
<b>Manchester Public Schools Manufacturing Program at Manchester High School</b> Manchester School District, Manchester, CT
<b>Academy of Manufacturing, Engineering &amp; Technology (MET) at New Britain High School</b> New Britain School District, New Britain, CT
<b>Manufacturing for Industry: YMPI with EWIB at RHAM High School</b> Regional School District 8, Hebron, CT
<b>Manufacturing Pathway at Tourtellotte Memorial High School</b> Thompson School District, North Grosvenordale, CT
<b>Precision Machining Technology at Vinal Technical High School</b> Connecticut Technical Education and Career System (CTECS), Middletown, CT
<b>Manufacturing Academy at Waterbury Career Academy</b> Waterbury School District, Waterbury, CT
<b>Career and Technical Education at Windsor High School<sup>14</sup></b> Windsor School District, Windsor, CT

<sup>14</sup> 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
<b>Total Possible Score:</b>				<b>10</b>	<b>19</b>