



Naugatuck
Valley
Community
College



**WORKFORCE & APPRENTICESHIP
TRAINING**



COURSE LISTINGS

MANUFACTURING



[nv.edu/manufacturing](https://www.nv.edu/manufacturing)





MANUFACTURING

Apprenticeship & Workforce Training

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Naugatuck Valley Community College
nv.edu/manufacturing

Waterbury: 750 Chase Parkway
Waterbury, CT 06708-3011

Danbury: 190 Main Street
Danbury, CT 06810

Henry Abbott Technical High School

21 Hayestown Avenue
Danbury, CT 06811

W.F. Kaynor Technical High School

43 Tompkins Street
Waterbury, CT 06708

This program (or event) is funded (in whole or in part) by the Connecticut Advanced Manufacturing Initiative, TC-26448-14-60-A-9, as implemented by the United States Employment and Training Administration.

CONNECTICUT MANUFACTURING INNOVATION FUND APPRENTICESHIP PROGRAM

The Manufacturing Innovation Fund (MIF) Apprenticeship Program provides financial assistance to Connecticut manufacturers that have a Registered Apprentice Program as well as approved Apprentice Related Instruction Training Providers. This is a program to assist manufacturing companies to provide training for their new apprentices, registered on or after July 1, 2015. The program is administered by the Connecticut Department of Labor and funded through the Department of Economic and Community Development's Connecticut Manufacturing Innovation Fund.

The goals of the Manufacturing Apprenticeship Program are:

- to support manufacturing companies in their efforts to train registered apprenticeship workers in the appropriate skills to meet current and emerging market needs and occupational skills;
- and to provide a real-time demand driven registered apprenticeship program that combines a structured work schedule of on the job training together with related classroom instruction.

The MIF Registered Apprenticeship Program assists manufacturers with wage subsidy, competency/performance, and related instruction reimbursement. NVCC is an approved Registered Apprenticeship Related Instruction Provider for the manufacturing trades. Courses that have been approved for related training are designated with this symbol:

Reimbursement is available to employers, for qualified and registered apprentices, that meet the terms and conditions of the apprenticeship agreement. There are funding limits per apprentice for related training costs.

**Apprenticeship Funding
Approved**

Please contact Eleanor Lennon at (860) 263-6089 or via email at Eleanor.lennon@ct.gov for further additional information or assistance with the program.



CUSTOMIZED TRAINING FOR BUSINESS AND INDUSTRY

In today's competitive global market, the difference between growth and stagnation lies in the quality of your team. Enhance the knowledge and skills of your employees to create a high performance environment with experts from Naugatuck Valley Community College (NVCC).

NVCC recognizes that training programs need to accommodate your employee work schedules and production timelines; so we will deliver your training where and when you need it. Days, evenings, or weekends, your site or ours, we will be there when you need us. Our cost-effective customized training solutions can be tailored to meet the needs of your organization and include an array of business, soft-skills, and technical topics.

Our training experts can assess learning needs, identify gaps and provide training solutions. Contact Judith Slisz at jslisz@nv.edu, 203-596-8743 or Sharon Lutkus at slutkus@nv.edu, 203-596-2197.

Some of our most popular programs are listed below and in this catalog. If you don't see what you need, let us know. We have access to a huge variety of topics and experts, and will be happy to match the right training to your company.

- Bookkeeper
- Budget Basics
- Conflict Resolution
- Delegating
- Diversity
- Dress for Success
- English
- Grant Writing
- Intergenerational Communication
- Internal Control
- Leadership
- Manufacturing
- Microsoft Office Applications
- Professional Development Planning
- Project Management
- QuickBooks Pro 2015
- Spanish
- Stress Management
- Succession Planning
- Supervisory
- Technical Writing
- Time Management
- Welding



NVCC FALL 2016 MANUFACTURING AT A GLANCE

MANUFACTURING • nv.edu/manufacturing

3868.....	Blueprint Reading I	Tue.....	8/30-12/13	9:10a-10:55a	T649.....	WA.....	\$465
3856.....	Blueprint Reading I	Tue.....	8/30-12/13	12:45p-2:30p	T649.....	WA.....	\$465
3872.....	Blueprint Reading I	Mon.....	8/29-12/19	4:30p-6:10p	ABTECH.....	DA	\$465
4257.....	Blueprint Reading I	Tue., Thur.....	9/13-10/6.....	5:30p-8:30p	Kaynor	WA.....	\$465
4273.....	CAD 2D	Mon., Wed.....	8/29-12/14	5:30p-7:55p	T503.....	WA.....	\$465
4285.....	CAD 2D	Tue., Thur.....	8/30-12/15	9:35a-12p	T504.....	WA.....	\$465
3857.....	CNC Basics	Mon., Wed.....	9/12-10/5.....	5:30p-8:30p	Kaynor	WA.....	\$550
4275.....	CNC Intermediate	Mon., Wed.....	10/17-11/14.....	5:30p-8:30p	Kaynor	WA.....	\$550
SP17.....	EDM - Intro	Tue., Wed., Thur.....	1/10-1/12.....	5:30p-8:30p	T400.....	WA.....	\$286
SP17.....	EDM - Intermediate.....	Mon., Tue., Wed., Thur.....	1/16-1/19.....	5:30p-8:30p	T400.....	WA.....	\$286
3849.....	Manufacturing Math I.....	Mon., Wed.....	8/29-12/14	12:45p-2:05p	T515.....	WA.....	\$600
3852.....	Manufacturing Math I.....	Mon., Wed.....	8/29-12/14	2:20p-3:40p.....	T515.....	WA.....	\$600
3871.....	Manufacturing Math I.....	Tue., Thur.....	9/13-12/13	4:30p-5:50p.....	ABTECH.....	DA	\$600
4276.....	Metal Forming Design Intro.....	Tue.....	9/20-12/13	5:30p-8:30p	Kaynor	WA.....	\$499
4277.....	Metrology	Tue., Thur.....	10/18-11/17.....	5:30p-8:30p	Kaynor	WA.....	\$350
7180.....	OSHA 10 Hour	Sat.....	8/20-8/27.....	9a-4p.....	T627.....	WA.....	\$335
4193.....	OSHA 10 Hour	Sat.....	12/3-12/10	9a-4p.....	T645.....	WA.....	\$355
3861.....	Quality Control Inspect	Wed.....	9/14-11/2.....	5:30p-8:30p	Kaynor	WA.....	\$400

WELDING • nv.edu/welding

7212.....	Welding Information Session.....	Wed.....	8/31.....	6:30p	T516.....	WA.....	FREE
4261.....	Welding Information Session.....	Wed.....	12/7.....	6:30p	T531.....	WA.....	FREE
4188.....	Welding Processes.....	Sat.....	10/15-10/29.....	9a-3:30p	T403.....	WA.....	\$850
4191.....	GMAW/MIG Basic**.....	Mon., Wed.....	10/3-11/28	6p-9p.....	T403.....	WA.....	\$2,100
4192.....	GMAW/MIG Adv w/Cert**	Mon., Wed.....	12/5-2/1	6p-9p.....	T403.....	WA.....	\$2,500
	GMAWAdv OSHA.....	Sat.....	12/3-12/10	9a-4p.....	T645.....	WA.....	
4189.....	GTAW/TIG Basic**	Tue., Thur.....	10/4-11/22	6p-9p.....	T403.....	WA.....	\$2,100
7184.....	GTAW/TIG Adv W/Cert**	Mon., Tue., Wed., Thur.....	8/15-9/8	6p-9p.....	T403.....	WA.....	\$2,500
	GTAW Adv OSHA	Sat.....	8/20-8/27.....	9a-4p.....	T627.....	WA.....	
4190.....	GTAW/TIG Adv W/Cert**	Tue., Thur.....	12/1-1/24.....	6p-9p.....	T403.....	WA.....	\$2,500
	GTAW Adv OSHA	Sat.....	12/3-12/10	9a-4p.....	T645.....	WA.....	

COURSE DESCRIPTIONS

Blueprint Reading I

An introduction to blueprint reading with a study of orthographic projection. Topics include lines and their uses, auxiliary views, sectional views, basic and special dimensioning, dimensioning practices for holes, chamfers, angles, tapers, keyways diameters and radii. Geometric tolerancing and dimensioning (GDT) is introduced. 24 hours

Apprenticeship Funding
Approved

Blueprint Reading II

This course is a continuation of the study of the assembly and detail drawings started in Blueprint Reading I. There will be an in-depth study of individual feature types as well as geometric dimensioning and tolerancing (GDT). Emphasis will be on design intent as well as the many options for producing and inspecting designed parts. 24 hours

Apprenticeship Funding
Approved

CAD 2D

Gain an introductory understanding of two-dimensional computer-aided drafting using AutoCAD. The course will include drawing and editing of elementary geometric entities and dimensioning and plotting. Mechanical drafting problems and examples will be studied to reinforce learning. 75 hours

Apprenticeship Funding
Approved

CNC Basics

This CNC machining and programming course includes: Cartesian coordinates, safe use of CNC equipment, setup and operation of a two-axis CNC lathe and a three-axis CNC machining center, programming and runoff of parts. Students will program simple parts for a CNC lathe using a conversational control and parts in G code language for a CNC vertical machining center. 24 hours

Apprenticeship Funding
Approved



"My expectations were exceeded in the EDM Intermediate course; one of the top courses taken at NVCC."

Ray Hockert
NVCC EDM student

CNC Intermediate

Take the next step in building your CNC knowledge and skills. Learn accurate 2 and 3 axis lathe and milling methods. Haas Mill and Lathe programming and MasterCam software will be used in class. In addition you will be introduced to laser and plasma processes with CNC programming. 24 hours

**Apprenticeship Funding
Approved**

EDM - Basic

Electrical Discharge Machining (EDM) is commonly used in tool, die and mold-making industries. This introduction to EDM technology will include both the history and current applications of this machining process. Learn basic terminology, operation, and maintenance of the Wire EDM as a foundation for additional modules that will increase your understanding of and skills in this important metal-cutting technology. 9 hours

**Apprenticeship Funding
Approved**

EDM - Intermediate

Take the next step and build on your basic knowledge of the Wire EDM machine and processes. Through hands on operation of the Wire EDM machine and discussion with your peers you will expand your understanding of and skills for the various applications of this important machining process. Class sizes are small to provide ample machine time. 12 hours

Prerequisite: EDM - Basic or permission of the instructor.

**Apprenticeship Funding
Approved**

Manufacturing Math I

Gain the knowledge to apply mathematics and its applications in the manufacturing environment.

Learn fractions, decimals, tolerances, percentages, power and roots, metric system, positioning, ratios and proportions. 42 hours

**Apprenticeship Funding
Approved**

Manufacturing Math II

A further study of arithmetic and trigonometric operations applied to manufacturing circumstances. The following geometric entities will be studied in detail: the circle, regular and irregular polygons, the right triangle, and oblique triangle. Learn the application of angular arithmetic including the study of decimal conversion, the Pythagorean theorem, Sin, Cos, and Tan functions, and the Law of Sines and Law of Cosines. *Prerequisite:* Completion of Manufacturing Math I or with consent of the instructor. 42 hours

**Apprenticeship Funding
Approved**

Metal Forming Design - Eyelet Theory

This course is designed to provide the essential theory of metal forming. Explore the characteristics and uses of various forming materials and carbides. Join our expert instructor and earn the basic principles of blank calculations, layouts, punch and die radius, quoting, tonnage requirements and trouble shooting. 24 hours

**Apprenticeship Funding
Approved**

Metrology

This course will introduce the technology of measurement and provide hands-on practice with a variety of measurement devices including: calipers, micrometers, scales, height stands, surface plates, thread gauges, indicator stands, depth micrometers, dial indicators, optical comparators, and coordinate measuring machines. The applications for each device and the care and calibration of each will be emphasized. 30 hours.

Apprenticeship Funding
Approved

OSHA 10 Hour General/Manufacturing

This course covers OSHA policies, procedures, and standards, as well as general industry safety and health principles. Topics include scope and application of the general industry standards with special emphasis placed on those areas that are the most hazardous. Upon successful completion, the student will receive an OSHA General Industry Safety and Health 10-hour course completion card. 10 hours.

Apprenticeship Funding
Approved

Quality Control Inspection

Gain a comprehensive understanding of inspection necessary to identify product dimensional compliance. Methods introduced will support in-process inspection and receiving activities. Using hands-on activities utilizing different forms of inspections. Students will learn how to collect and interpret data in this important manufacturing process. 24 hours.

Apprenticeship Funding
Approved



NVCC is an Approved Testing Facility for the State of Connecticut Department of Transportation Welding Certification. Please contact 203-575-8029 for a testing schedule.

Welding Processes

This course is designed for the beginner and provides an introduction to three processes widely used in the welding field: Shielded Metal Arc Welding (SMAW/ Stick), Gas Metal Arc Welding (GMAW/MIG) and Gas Tungsten Arc Welding (GTAW/TIG). You will learn the basics of welding safety, cutting, equipment and materials used in these processes in our state of the art welding lab. 21 hours.

Welding - Gas Metal Arc (GMAW/MIG) - Basic

GMAW is a process used mostly in manufacturing and repair shops. Students will be introduced to: welding safety, shield gases, equipment / metal selection and preparation. Class size is limited to provide maximum time for hands-on welding technique practice. 45 hours.

Apprenticeship Funding
Approved



“My experience here at NVCC was excellent. The instructor was very helpful and patient. He was extremely knowledgeable and gave great feedback. I believe this course will help me to advance in my welding career with confidence.”

Chris Coffey
NVCC Welding Student

Welding - Gas Metal Arc (GMAW/MIG) - Advanced

A further study of the techniques learned in GMAW Basic. This course will provide time to practice and perfect weld joints and types. A focus will be the inspection and testing of welds. Students will prepare for and be tested in accordance with the American Welding Society (AWS) D1.1 3G certification. OSHA 10 Safety Certification is included.

Prerequisite: Basic GMAW or permission of the instructor. 55 hours.

Apprenticeship Funding
Approved

Welding - Gas Tungsten Arc (GTAW / TIG) - Basic

GTAW is primarily used to weld stainless steel, aluminum, titanium and other nonferrous metals used in various industries, including manufacturing, aerospace and piping. Students will be introduced to: welding safety, electrodes, shield gases, equipment, plasma cutting, and metal selection and preparation. Class size is limited to provide maximum time for hands-on welding technique practice. 45 hours.

Apprenticeship Funding
Approved

Welding - Gas Tungsten Arc (GTAW / TIG) - Advanced

Apprenticeship Funding
Approved

A further study of the techniques learned in GTAW Basic. This advanced course will provide time to practice and perfect the art of various weld joints and types in preparation for welding certification. Students will be tested in accordance with the American Welding Society (AWS) D17.1, 2F Certification. OSHA 10 Safety Certification is included. *Prerequisite:* Basic GTAW (TIG) or permission of the instructor. 55 hours.

Welding - Shielded Metal Arc (SMAW/STICK) - Basic

Apprenticeship Funding
Approved

SMAW techniques and processes are widely used in the maintenance and construction industries. Gain an understanding of the required equipment, interpret welding symbols and prints, and then put it all together while you practice your new welding skills in a state of the art welding lab. Class size is limited to provide maximum time for hands-on welding technique practice. 45 hours.

Welding - Shielded Metal Arc (SMAW) - Advanced

Apprenticeship Funding
Approved

This course is a continuation of the study and practice of the various weld joints and types learned in SMAW Basic. Time is provided to practice and perfect the techniques in preparation for welding certification. Students will be tested in accordance with the American Welding Society (AWS) D1.1, 1G/2G Combo Certification. OSHA 10 Safety Certification is included. *Prerequisite:* Basic SMAW (STICK) or permission of the instructor. 55 hours.



IMPORTANT INFORMATION

Textbooks and Educational Materials

Required textbooks, materials and personal safety equipment will be provided in class and are included in the cost of the course. Courses with hands-on components on the manufacturing floor or welding lab may require special shoes and clothing. Please contact Sharon Lutkus for specifics. slutkus@nv.edu or 203-596-2197.

Refund Policy, Changes and Cancellations

Withdrawal and refund requests must be received three business days (72 hours) prior to the beginning of class unless stated otherwise in the course description. Refunds are not granted after this deadline.

Telephone: 203-575-8029

Fax: 203-575-8243

Email: nc@nv.edu

Mail: Non-Credit Refunds, Room 407
Naugatuck Valley Community College
750 Chase Pkwy., Waterbury, CT 06708

If there is a course cancellation due to insufficient enrollment, students will be notified by phone, mail and/or email. Please make sure when registering that your contact information is up-to-date. We would like to offer you the opportunity to transfer to another section, if available, or to another class of your choosing. If we have not heard from you within 7 business days, a refund will automatically be processed. Please allow 2-4 weeks for processing. The person registered in our records system is the person who will receive the refund.

The College reserves the right to make changes to the information listed in this publication or to cancel courses due to insufficient enrollment or other reasonable causes. Full refund is made if the College cancels the course.

College Closings & Delays

College closings due to inclement weather are announced over local AM/FM radio/TV stations, on the college website (nv.edu), on the college's main phone line (203-575-8000) and a text message is sent to everyone who is registered through the myCommNetAlert System.

Likewise, in the event of an early closing, the same communication will occur. If the college has a delayed opening, all classes that begin before the delayed opening time will not be held that day and will be rescheduled at another time.

Danbury and off-site cancellations: If NVCC cancels or delays classes, this applies to Waterbury and Danbury Campuses as well as off-site locations. In the event of cancellation or delay of Danbury classes only, an announcement will be posted on nv.edu/Danbury or you may call 203-797-9361 for an automated message.

Nondiscrimination

Naugatuck Valley Community College does not discriminate on the basis of race, color, religious creed, age, sex, national origin, marital status, ancestry, present or past history of mental disorder, learning disability or physical disability, sexual orientation, gender identity and expression or genetic information in its programs and activities. In addition, the College does not discriminate in employment on the additional basis of veteran status or criminal record. The following individual has been designated to handle nondiscrimination policies regarding disability policies: Robert Divjak, Director of Facilities/Section 504/ADA Coordinator, Room C216, Naugatuck Valley Community College, 750 Chase Parkway, Waterbury, CT 06708; 203-575-8235. The following individual has been designated to handle nondiscrimination policies regarding sex discrimination as well as other forms of prohibited discrimination: Jacquie Swanson, Associate Director of Human Resources/Title IX Coordinator, Room K704, Naugatuck Valley Community College, 750 Chase Parkway, Waterbury, CT 06708; 203-575-8043.

Students with Disabilities

If you are a student with a disability that may require an academic adjustment, please contact Terry Latella at 203-575-8608. Adjustments will only be provided to those students who have completed the disabilities disclosure process. Please contact the appropriate office at least three weeks prior to the course. Failure to do this may result in a delay or inability to provide the requested adjustment(s).



HOW TO REGISTER AN EMPLOYEE

Step 1 – Choose the right program

Please browse our course descriptions and see our current course offerings insert “Manufacturing at a Glance.” If you have questions or do not see what you or your employees need, contact Sharon Lutkus, Coordinator at slutkus@nv.edu or 203-596-2197. New program ideas are always welcome.

Step 2 – Determine the funding source

Payment must be provided at the time of registration. Payment methods include: check, American Express, MasterCard, Visa and Discover credit/debit cards, tuition authorization letter, purchase order, or CT DOL apprenticeship funding.

A Tuition Authorization Letter or PO must be on official company stationary and include:

- student’s proper name, address and phone number
- course title(s), course number(s)(CRN), and total course fee
- guarantee of payment in full for the course(s)
- company contact and mailing address where the invoice should be sent
- signature of the authorizing agent

CTDOL Apprenticeship Funding is available for registered apprentices. A completed authorization form documenting the apprentice’s eligibility and available funding must accompany their registration. Apprenticeship Funding Eligibility forms are available for downloading at www.nv.edu/manufacturing. NVCC will then invoice the CTDOL Apprenticeship Grant on behalf of the apprentice. See page 2 for more details.

Step 3 – Submit the Registration and Payment

Complete the registration form found on the next page and send with payment using one of the methods below:

Mail: NVCC, Non-Credit Lifelong Learning Registration, Room K407, 750 Chase Parkway Waterbury, CT 06708.

Fax: 203-575-8277 AMEX/MC/Visa/Discover, or Tuition Authorization Letter only.

Phone: 203-575-8029, Monday - Friday, 8:00 am to 5:00 pm AMEX/MC/Visa/Discover only.

Walk In: NVCC, 750 Chase Parkway, Waterbury, CT, Non-Credit Lifelong Learning, Kinney Hall, Room K407 or 183 Main Street, Danbury CT; Moving Sept. 12 to 190 Main Street, Danbury, CT 06810 Monday through Friday, 8:00 am to 5:00 pm.



750 Chase Parkway • Waterbury, CT 06708

Non-credit Lifelong Learning Registration Form

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STUDENT IDENTIFICATION NUMBER

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Social Security Number (required)

Print Name _____ Phone (Home) _____

Street Address _____ Phone (Work) _____

City/State/Zip _____ (Cell) _____

Email Address _____

New address and/or phone #. New student.

Maiden Name (if applicable) _____ Citizenship (required): Are you a United States citizen? Yes No

Date of Birth (required) _____ Gender Male Female

Payment information:

Credit Card: MC VISA Discover

Name on Credit Card _____

Card No. _____

Expiration Date (required) _____ Security Code _____

Check Cash Tuition Authorization Letter

What is your race? Choose one or more:

White (10) Black or African American (20)

Asian (45) American Indian or Alaskan Native (50)

Native Hawaiian or Other Pacific Islander (80)

Other (90) Choose not to respond (60)

Ethnicity: Hispanic/Latino Non-Hispanic/Non-Latino

Choose not to respond (none)

Please provide the following race and ethnic data. This information is requested on a VOLUNTARY basis by the U.S. Department of Education, National Center for Education Statistics. Your answer will not affect your registration or admission to the college.

Withdrawal and refund requests must be received THREE business days PRIOR to the beginning of class unless stated otherwise in the course description.

CRN	COURSE TITLE	COST	DATES	DAYS (circle)	TIME	ROOM#
				M T W R F S S		
				M T W R F S S		
				M T W R F S S		

TOTAL COST: _____



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