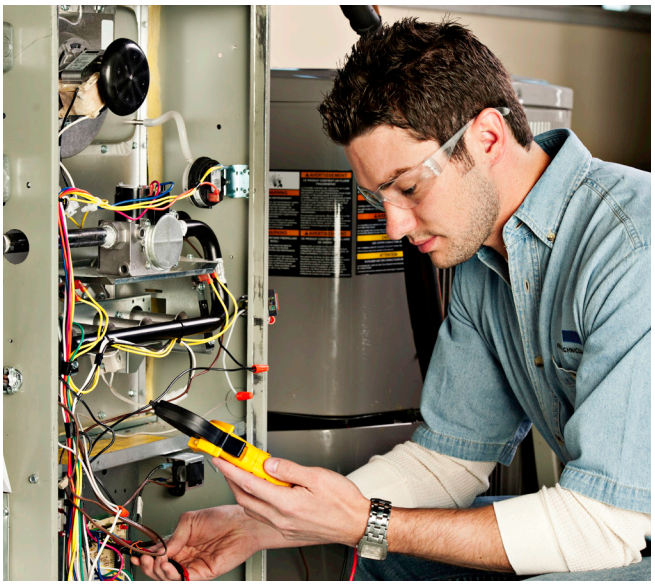
HVAC

HVAC (Heating, Ventilation and Air-Conditioning) systems technicians work on residential and commercial buildings installing and maintaining electrical, gas and oil heating and air-conditioning systems. Rapidly increasing technology in HVAC work requires employers to seek well trained employees from technical school training or apprenticeship programs. CITC's four-year program has been designed by highly qualified subject matter experts with this in mind. CITC classes present theoretical and practical skills essential to your success as an HVAC installer or technician.

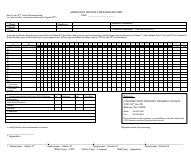
Students will be required to have access to a computer or tablet device with a working camera and microphone. Additionally, all students will need to have access to a reliable internet source when classes begin in the fall. For additional information on the technical requirements for this program please contact the CITC office at (425) 454-2482.

Note: It is crucial that students have required books prior to the first class meeting. A student who does not have books by the end of the second week may be dismissed from class and charged with an absence.

CITC strives to offer a variety of class schedules and locations for students to select from. To ensure your place in a class of your choice CITC encourages your registration as soon as registration opens. Registration is on a first come, first serve basis. If the class you have selected is full, you will be transferred into the next available class at the CITC facility nearest your home zip code.



APPRENTICESHIP MONTHLY **WORK LOGS**



Apprenticeship monthly work logs can be submitted to the apprenticeship department via email: **worklogs@citcwa.org**; fax: **(425) 289-0085**; mail to the CITC main office: **1930 116th Ave NE Bellevue, WA 98004**; or placed in the Drop Box outside of CITC Facilities.

NCCERCONNECT 2.0 WITH PEARSON eTEXT ACCESS CARD

NCCERConnect 2.0 is an online training program that enhances student learning with a range of visual, auditory, and interactive elements. Your Pearson eText Access Card will give you access to an eBook version of the textbook included in the package.

https://registration.mypearson.com

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HVAC LEVEL 1

Minimum: 201 hours per year

HVAC 101: FALL QUARTER

Students will thoroughly review construction site safety and shop safety and are introduced to trade mathematics; safe use of basic hand and power tools; blueprint reading; rigging and HVAC tools. Includes OSHA 10 training. Lab date schedule will be provided at the beginning of the quarter. Scheduled dates may be adjusted at instructor's discretion.

HVAC 102: WINTER QUARTER

Students will learn HVAC related trade math; basic electricity for HVAC and are introduced to cooling and heating principles, air distribution systems skills. Lab date schedule will be provided at the beginning of the quarter. Scheduled dates may be adjusted at instructor's discretion.

HVAC 103: SPRING QUARTER

Students will be introduced to basic copper and plastic piping practices; and basic carbon steel piping practices; soldering and brazing; and will review related 2020 NEC Code Sections and Washington Amendments. Lab date schedule will be provided at the beginning of the quarter. Scheduled dates may be adjusted at instructor's discretion.

REQUIRED BOOKS - HVAC LEVEL 1		
It is the student's responsibility to have the following book(s) on the first night of class:		
BOOK	**Soft Cover ISBN**	**Hard Cover ISBN**
NCCER Core Curriculum Trainee Guide, 6th Edition, NCCERConnect 2.0 with eText	**NCCERConnect (includes eText) ISBN-13:** 9780137483136	
NCCER Core Curriculum Trainee Guide, 6th Edition	9780137483341	9780137483358
NCCER HVAC Level 1 Trainee Guide, 5th Edition, NCCERConnect 2.0 with eText	**NCCERConnect (includes eText) ISBN-13:** 9780135187036	
NCCER HVAC Level 1 Trainee Guide, 5th Edition	978-0-13-518509-4	
Modern Refrigeration & Air Conditioning Textbook, 20th Ed. Bundle - Textbook, Workbook, and lab manual	978-1-64564-718-8	
2020 National Electric Code (NEC)	978-1-4559-2297-0	
Washington State Electrical RCW/WACs	Free download available through L&I	

*See page 44 for Modern Refrigeration Ordering Information
*Purchase NCCERConnect through https://registration.mypearson.com/

HVAC LEVEL 2

Minimum: 201 hours per year

HVAC 201: FALL QUARTER

Students will learn about alternating current, transformers and motors used in HVAC; compressors, refrigerants and oils; leak detection, evacuation, recovery and charging. Lab date schedule will be provided at the beginning of the quarter. Scheduled dates may be adjusted at instructor's discretion.

HVAC 202: WINTER QUARTER

Students will learn about metering devices, heat pumps, basic maintenance. Students will also learn components of 2017 NEC and WAC rules related to HVAC; review green building practices; and will complete a review to prepare for the EPA exam. Lab date schedule will be provided at the beginning of the quarter. Scheduled dates may be adjusted at instructor's discretion.

HVAC 203: SPRING QUARTER

Students will learn about chimneys, vents and flues; sheet metal duct systems; fiberglass and fabric duct systems; commercial airside systems; air quality equipment and will be introduced to hydronic systems. Lab date schedule will be provided at the beginning of the quarter. Scheduled dates may be adjusted at instructor's discretion.

REQUIRED BOOKS - HVAC LEVEL 2		
It is the student's responsibility to have the following book(s) on the first night of class:		
BOOK	**Soft Cover ISBN**	**Hard Cover ISBN**
NCCER HVAC Level 2 Trainee Guide, 5th Edition, NCCERConnect 2.0 with eText	**NCCERConnect (includes eText) ISBN-13:** 9780135187159	
NCCER HVAC Level 2 Trainee Guide, 5th Edition	978-0-13-518512-4	
NCCER Your Role in the Green Env. Trainee Gd, 3rd Edition	978-0-13-670120-0	
Modern Refrigeration & Air Conditioning Textbook, 20th Ed. Bundle - Textbook, Workbook, and lab manual	978-1-63126-357-6	
2017 National Electric Code (NEC)	978-1-4559-2297-0	
Washington State Electrical RCW/WACs	Free download available through L&I	

*Purchase NCCERConnect through **https://registration.mypearson.com/**

HVAC LEVEL 3

Minimum: 201 hours per year

HVAC 301: FALL QUARTER

Students will learn about refrigerants and oils; compressors; metering devices; and retail refrigeration systems. Lab date schedule will be provided at the beginning of the quarter. Scheduled dates may be adjusted at instructor's discretion.

HVAC 302: WINTER QUARTER

Students will learn about commercial hydronic systems; steam systems; planned maintenance; and water treatment practices. Lab date schedule will be provided at the beginning of the quarter. Scheduled dates may be adjusted at instructor's discretion.

HVAC 303: SPRING QUARTER

Students will learn about troubleshooting electronic controls; troubleshooting oil heating; troubleshooting heat pumps; and troubleshooting accessories. Lab date schedule will be provided at the beginning of the quarter. Scheduled dates may be adjusted at instructor's discretion.

REQUIRED BOOKS - HVAC LEVEL 3		
It is the student's responsibility to have the following book(s) on the first night of class:		
BOOK	**Soft Cover ISBN**	**Hard Cover ISBN**
NCCER HVAC Level 3 Trainee Guide, 5th Edition, NCCERConnect 2.0 with eText	**NCCERConnect (includes eText) ISBN-13:** 9780135187227	
NCCER HVAC Level 3 Trainee Guide, 5th Edition	978-0-13-518510-0	
Modern Refrigeration & Air Conditioning Textbook, 20th Ed. Bundle - Textbook, Workbook, and lab manual	978-1-63126-357-6	
2020 National Electric Code (NEC)	978-1-4559-2297-0	
Washington State Electrical RCW/WACs	Free download available through L&I	

*Purchase NCCERConnect through **https://registration.mypearson.com/**

HVAC LEVEL 4

Minimum: 201 hours per year

HVAC 401: FALL QUARTER

Students will learn about; water treatment; indoor air quality; energy conservation equipment and related 2017 NEC Code and WA Amendments related to HVAC. Lab date schedule will be provided at the beginning of the quarter. Scheduled dates may be adjusted at instructor's discretion.

HVAC 402: WINTER QUARTER

Students will learn about building management systems; system air balancing; systems start-up and shut down; construction drawings and specifications. Lab date schedule will be provided at the beginning of the quarter. Scheduled dates may be adjusted at instructor's discretion.

HVAC 403: SPRING QUARTER

Students will learn about; heating & cooling system design; commercial and industrial refrigeration systems, alternative heating and cooling systems and are introduced to supervisory skills. Lab date schedule will be provided at the beginning of the quarter. Scheduled dates may be adjusted at instructor's discretion.

REQUIRED BOOKS - HVAC LEVEL 4		
It is the student's responsibility to have the following book(s) on the first night of class:		
BOOK	**Soft Cover ISBN**	**Hard Cover ISBN**
NCCER HVAC Level 4 Trainee Guide, 5th Edition	978-0-13-518506-3	
Modern Refrigeration & Air Conditioning Textbook, 20th Ed. Bundle - Textbook, Workbook, and lab manual	978-1-63126-357-6	
2020 National Electric Code (NEC)	978-1-4559-2297-0	
Washington State Electrical RCW/WACs	Free download available through L&I	

*Purchase NCCERConnect through **https://registration.mypearson.com/**

OPTIONAL BOOKS - HVAC LEVEL 4		
BOOK	**Soft Cover ISBN**	**Hard Cover ISBN**
2020 Key Word Index by Tom Henry	9781733462143	
Key Term Index For 2020 RCW19.28 & WAC 296-46B by Paul Briganti	978-1-7322559-1-3	

HVAC Instructors

As a part of our dedication and commitment to training, we take pride in delivering top quality instructors. CITC's instructors are highly skilled journey-level workers who bring their knowledge and years of trade experience into the classroom. All CITC instructors have been certified by the National Center for Construction Education and Research.

Peter Chartrand is a graduate of CITC. Pete started in the trades in 1992 as a CITC Apprentice and was the HVAC student of the year in 1997. Pete became a CITC faculty member in 2007.

David Norman started in the trades in 1979 and became a CITC faculty member in 1991.

HVAC Schedule & Tuition

Western Washington Region

HVAC LEVEL 1								
Bellevue	101	Fall	14 weeks	87 hours	Tue/Thu	5p-8p	September 8 - December 15 *+ 1 Saturday*	Tuition: $1,625
Bellevue	102	Wtr	9 weeks	63 hours	Tue/Thu	5p-8p	January 3 - March 9 *+ 1 Saturday*	Tuition: $1,625
Bellevue	103	Spr	8 weeks	51 hours	Tue/Thu	5p-8p	April 11 - June 8	Tuition: $1,625
HVAC LEVEL 2								
Bellevue	201	Fall	13 weeks	87 hours	Fri/Sat	8a-5p	September 10 - December 11	Tuition: $1,625
Bellevue	202	Wtr	8 weeks	63 hours	Fri/Sat	8a-5p	January 14 - March 13	Tuition: $1,625
Bellevue	203	Spr	9 weeks	51 hours	Fri/Sat	8a-5p	April 8 - June 11	Tuition: $1,625
HVAC LEVEL 3								
Bellevue	301	Fall	13 weeks	87 hours	Fri/Sat	8a-5p	September 17 - December 18	Tuition: $1,625
Bellevue	302	Wtr	8 weeks	63 hours	Fri/Sat	8a-5p	January 21 - March 19	Tuition: $1,625
Bellevue	303	Spr	9 weeks	51 hours	Fri/Sat	8a-5p	April 15 - June 18	Tuition: $1,625
HVAC LEVEL 4								
Bellevue	401	Fall	13 weeks	87 hours	Fri/Sat	8a-5p	September 10 - December 11	Tuition: $1,625
Bellevue	402	Wtr	8 weeks	63 hours	Fri/Sat	8a-5p	January 14 - March 13	Tuition: $1,625
Bellevue	403	Spr	9 weeks	51 hours	Fri/Sat	8a-5p	April 8 - June 11	Tuition: $1,625

OSHA®

All first year classes include
OSHA 10 for Construction