

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.



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 SENT HOME AND BE CHARGED WITH AN ABSENCE.

HVAC LEVEL 1

Minimum: 201 hours per year

HVAC 101: FALL QUARTER

Students will thoroughly review construction site safety; shop safety; introduction to trade mathematics; safe use of basic hand and power tools; blueprint reading; rigging; and HVAC tools. *Schedule for lab dates will be handed out the first night of class each quarter.*

HVAC 102: WINTER QUARTER

Students will learn HVAC related trade math; basic electricity for HVAC; and are introduced to cooling and heating principles and air distribution systems skills.

HVAC 103: SPRING QUARTER

Students will be introduced to basic copper, plastic piping, and basic carbon steel piping practices; soldering and brazing; and will review related National Electrical Code (NEC) articles and Washington State rules (RCW/WAC). Includes OSHA 10 training.

REQUIRED BOOKS - HVAC LEVEL 1

It is the student's responsibility to have the following book(s) on the first night of class:

NCCER Core Curriculum Trainee Guide, 5th Edition (Paperback) or NCCER Core Curriculum Trainee Guide, 5th Edition (Hardcover)	978-0-13-413098-9 978-0-13-413143-6
NCCER HVAC Level 1 Trainee Guide, 5th Edition	978-0-13-518509-4
Modern Refrigeration & Air Conditioning Textbook, 20th Edition Bundle - Textbook, Workbook, and Lab Manual	978-1-63126-357-6
2017 National Electric Code (NEC)	978-1-4559-1277-3
Washington State Electrical RCW/WACs	Free download available through L&I

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; and recovery and charging. *Schedule for lab dates will be handed out the first night of class each quarter.*

HVAC 202: WINTER QUARTER

Students will learn about metering devices, heat pumps, and basic maintenance. Students will also learn components of NEC and RCW/WAC rules related to HVAC, review green building practices, and will complete a review to prepare for the EPA exam.

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.

REQUIRED BOOKS - HVAC LEVEL 2

It is the student's responsibility to have the following book(s) on the first night of class:

NCCER HVAC Level 2 Trainee Guide, 5th Edition	978-0-13-518512-4
NCCER Your Role in the Green Environment Trainee Guide, 3rd Ed.	978-0-13-294863-0
Modern Refrigeration & Air Conditioning Textbook, 20th Edition Bundle - Textbook, Workbook, and Lab Manual	978-1-63126-357-6
2017 National Electric Code (NEC)	978-1-4559-1277-3
Washington State Electrical RCW/WACs	Free download available through L&I

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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 in person to the CITC front office.

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. *Schedule for lab dates will be handed out the first night of class each quarter.*

HVAC 302: WINTER QUARTER

Students will learn about commercial hydronic systems; steam systems; planned maintenance; and water treatment practices.

HVAC 303: SPRING QUARTER

Students will learn about troubleshooting electronic controls; troubleshooting oil heating; troubleshooting heat pumps; and troubleshooting accessories.

REQUIRED BOOKS - HVAC LEVEL 3

It is the student's responsibility to have the following book(s) on the first night of class:

NCCER HVAC Level 3 Trainee Guide, 5th Edition	978-0-13-518510-0
Modern Refrigeration & Air Conditioning Textbook, 20th Edition Bundle - Textbook, Workbook, and Lab Manual	978-1-63126-357-6
2017 National Electric Code (NEC)	978-1-4559-1277-3
Washington State Electrical RCW/WACs	Free download available through L&I

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 will review related National Electrical Code (NEC) articles and Washington State rules (RCW/WAC) related to HVAC. *Schedule for lab dates will be handed out the first night of class each quarter.*

HVAC 402: WINTER QUARTER

Students will learn about building management systems; system air balancing; systems start-up and shut down; and construction drawings and specifications.

HVAC 403: SPRING QUARTER

Students will learn about heating and cooling system design; commercial and industrial refrigeration systems; alternative heating and cooling systems; and are introduced to supervisory skills.

REQUIRED BOOKS - HVAC LEVEL 4

It is the student's responsibility to have the following book(s) on the first night of class:

NCCER HVAC Level 4 Trainee Guide, 5th Edition	978-0-13-518506-3
Modern Refrigeration & Air Conditioning Textbook, 20th Edition Bundle - Textbook, Workbook, and Lab Manual	978-1-63126-357-6
2017 National Electric Code (NEC)	978-1-4559-1277-3
2017 Key Word Index by Tom Henry	978-0997885743
Washington State Electrical RCW/WACs	Free download available through L&I



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 Chatrand 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. CITC faculty member since 2007.

Chad Minter is a graduate of CITC. Chad started in the trades in 2006 and graduated from CITC. CITC faculty member since 2018.

David Norman started in the trades in 1979. CITC faculty member since 1991.

Dale Willems started in the trade in 1988. CITC faculty member since 2015.



APPRENTICESHIP CAREER COACH



Struggling with your Apprenticeship?

If you need a career coach, call (877) 428-0442

¿Tiene dificultades con su aprendizaje?

Para ayuda de un mentor, marque (877) 428-0442

HVAC Schedule & Tuition

Western Washington Region

HVAC LEVEL 1							
Bellevue	101	Fall	15 wk/87 hr	Tue/Thu	5p-8p	September 3 - December 17	Tuition: \$1,500
Bellevue	102	Wtr	11 wk/63 hr	Tue/Thu	5p-8p	January 7 - March 17	Tuition: \$1,500
Bellevue	103	Spr	9 wk/51 hr	Tue/Thu	5p-8p	April 4 - June 2	Tuition: \$1,500
Vancouver	101	Fall	4 wk/81 hr	Fri/Sat	8a-5p	September 27 & 28; October 11 & 12; November 1 & 2; November 22 & 23; December 20 & 21 + <i>Assignments</i>	Tuition: \$1,500
Vancouver	102	Wtr	3 wk/60 hr	Fri/Sat	8a-5p	January 24 & 25; February 21 & 22; March 6 & 7; March 27 & 28 + <i>Assignments</i>	Tuition: \$1,500
Vancouver	103	Spr	3 wk/60 hr	Fri/Sat	8a-5p	April 24 & 25; May 15 & 16; May 29 & 30; June 12 & 13 + <i>Assignments</i>	Tuition: \$1,500
HVAC LEVEL 2							
Bellevue	201	Fall	15 wk/87 hr	Mon/Wed	5p-8p	September 4 - December 18	Tuition: \$1,500
Bellevue	202	Wtr	11 wk/63 hr	Mon/Wed	5p-8p	January 6 - March 18	Tuition: \$1,500
Bellevue	203	Spr	9 wk/51 hr	Mon/Wed	5p-8p	April 6 - June 3	Tuition: \$1,500
Vancouver	201	Fall	4 wk/81 hr	Sat	8a-5p	September 14 & 28; October 12 & 26; November 9 & 23; December 7 & 21 + <i>Assignments</i>	Tuition: \$1,500
Vancouver	202	Wtr	3 wk/60 hr	Sat	8a-5p	January 11 & 25; February 8 & 22; March 14 & 28 + <i>Assignments</i>	Tuition: \$1,500
Vancouver	203	Spr	3 wk/60 hr	Sat	8a-5p	April 11 & 25; May 2 & 16; June 13 & 27 + <i>Assignments</i>	Tuition: \$1,500
HVAC LEVEL 3							
Bellevue	301	Fall	4 wk/81 hr	Fri/Sat	8a-5p	September 13 & 14; October 11 & 12; November 8 & 9; December 13 & 14 + <i>Assignments</i>	Tuition: \$1,500
Bellevue	302	Wtr	3 wk/60 hr	Fri/Sat	8a-5p	January 10 & 11; February 7 & 8; March 13 & 14 + <i>Assignments</i>	Tuition: \$1,500
Bellevue	303	Spr	3 wk/60 hr	Fri/Sat	8a-5p	April 10 & 11; May 8 & 9; June 12 & 13 + <i>Assignments</i>	Tuition: \$1,500
HVAC LEVEL 4							
Bellevue	401	Fall	15 wk/87 hr	Tue/Thu	5p-8p	September 3 - December 17	Tuition: \$1,500
Bellevue	402	Wtr	11 wk/63 hr	Tue/Thu	5p-8p	January 7 - March 17	Tuition: \$1,500
Bellevue	403	Spr	9 wk/51 hr	Tue/Thu	5p-8p	April 4 - June 2	Tuition: \$1,500



All first year classes include
OSHA 10 for Construction

