

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 and shop safety and are introduced 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, air distribution systems skills.

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 2017 NEC Code Sections and Washington Amendments. 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 HVAC Level 1 Trainee Guide, 4th Edition	ISBN: 978-0-13-340253-7
NCCER Core Curriculum Trainee Guide, 5th Edition	ISBN: 978-0-13-413098-9

Recommended Books - HVAC Level 1

Modern Refrigeration & Air Conditioning, 19th Edition	ISBN: 978-1-61-960199-4
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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. *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, 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.

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, 4th Edition	ISBN: 978-0-13-340427-2
NCCER Your Role in the Green Env. Trainee Gd, 3rd Edition	ISBN: 978-0-13-294863-0

Recommended Books - HVAC Level 2

Modern Refrigeration & Air Conditioning, 19th Edition	ISBN: 978-1-61-960199-4
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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, 4th Edition	ISBN: 978-0-13-375083-6
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Recommended Books - HVAC Level 3

Modern Refrigeration & Air Conditioning, 19th Edition	ISBN: 978-1-61-960199-4
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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. *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; construction drawings and specifications

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.

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, 4th Edition	ISBN: 978-0-13-375719-4
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Recommended Books - HVAC Level 4

Modern Refrigeration & Air Conditioning, 19th Edition	ISBN: 978-1-61-960199-4
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HVAC Schedule & Tuition

HVAC LEVEL 1

Bellevue	101	Fall	14 wk/72 hr	Mon/Wed	5p-8p	September 18 - December 6	Tuition: \$1,344
Bellevue	102	Wtr	12 wk/69 hr	Mon/Wed	5p-8p	January 3 - March 21	Tuition: \$1,344
Bellevue	103	Spr	10 wk/60 hr	Mon/Wed	5p-8p	April 2 - June 11	Tuition: \$1,344

HVAC LEVEL 2

Bellevue	201	Fall	14 wk/72 hr	Tue/Thu	5p-8p	September 19 - December 12	Tuition: \$1,344
Bellevue	202	Wtr	12 wk/69 hr	Tue/Thu	5p-8p	January 2 - March 20	Tuition: \$1,344
Bellevue	203	Spr	10 wk/60 hr	Tue/Thu	5p-8p	March 27 - May 31	Tuition: \$1,344

HVAC LEVEL 3

Bellevue	301	Fall	14 wk/72 hr	Mon/Wed	5p-8p	September 18 - December 6	Tuition: \$1,344
Bellevue	302	Wtr	12 wk/69 hr	Mon/Wed	5p-8p	January 3 - March 21	Tuition: \$1,344
Bellevue	303	Spr	10 wk/60 hr	Mon/Wed	5p-8p	April 2 - June 11	Tuition: \$1,344

HVAC LEVEL 4

Bellevue	401	Fall	14 wk/72 hr	Tue/Thu	5p-8p	September 19 - December 12	Tuition: \$1,344
Bellevue	402	Wtr	12 wk/69 hr	Tue/Thu	5p-8p	January 2 - March 20	Tuition: \$1,344
Bellevue	403	Spr	10 wk/60 hr	Tue/Thu	5p-8p	March 27 - May 31	Tuition: \$1,344



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 started in the trades in 1996. CITC graduate in 1996 and became a CITC faculty member in 2007.

Fred "Buck" Jones started in the trade in 1974 and became a CITC faculty member in 2001.

Eric Kaffenberger started in the trade in 1994 and became CITC faculty member in 2014.

Dale Willemse started in the trade in 1988 and became CITC faculty member in 2015.



Introducing CITC's state-of-the-art HVAC Lab in Bellevue, WA . Photo courtesy of Buck Jones.

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.