

Heating, Ventilation, and Air Conditioning (HVAC) Certificate

The Johnson County Community College Heating, Ventilation and Air Conditioning Technology program is in alignment with the National Center for Education Statistics (NCES) CIP code 47.0201: Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/Technician. This program prepares individuals to apply technical knowledge and skills to repair, install, service and maintain the operating condition of heating, air conditioning, and refrigeration systems. This program includes instruction in diagnostic techniques, the use of testing equipment and the principles of mechanics, electricity, and electronics as they relate to the repair of heating, air conditioning and refrigeration systems.

The certificate program is designed to prepare HVAC graduates for the HVAC job skills needed to service and maintain heating and air conditioning equipment. The HVAC program at JCCC is nationally accredited by the Partnership for Air-Conditioning, Heating, Refrigeration Accreditation (PAHRA).

Students who elect to complete the certificate learn the theory of operation, and how to service, repair and design gas furnaces, central air conditioners, heat pumps, and rooftop systems. The instructional format is reinforced by working on actual equipment in the laboratory. This program prepares students to obtain a General Industry OSHA 30 course completion card and prepares students to earn an EPA Refrigeration Management License. Completing this program will allow students to seek employment in the HVAC trade. This certificate also provides credit towards completing the comprehensive Heating, Ventilation, and Air Conditioning (HVAC), AAS (<https://catalog.jccc.edu/archives/2025-26/degreecertificates/heatingventilationandairconditioningtechnology/heating-ventilation-air-conditioning-hvac-technology-aas/>) degree.

(Major Code 6230; CIP Code 47.0201)

Heating, Ventilation and Air Conditioning (HVAC) Program web page (<http://www.jccc.edu/academics/credit/hvac/>)

Program Learning Outcomes

Johnson County Community College (JCCC) is committed to offering high-quality affordable programs that focus on developing knowledge and skills conducive to life-long learning. Both the General Education Student Learning Outcomes (<https://www.jccc.edu/about/leadership-governance/administration/institutional-effectiveness-branch/outcomes-assessment/learning-outcomes.html>) and Institutional Learning Outcomes (<https://www.jccc.edu/about/leadership-governance/administration/institutional-effectiveness-branch/outcomes-assessment/institutional-learning-outcomes.html>) convey JCCC's approach to programmatic outcomes. Additionally, students who successfully complete the Heating, Ventilation, and Air Conditioning (HVAC) Certificate from JCCC will be able to:

- Identify heat transfer, pressure, and temperature relationships within the refrigeration cycle.
- Identify the pressure and temperature relationships within the refrigeration cycle.
- Properly commission furnace and air conditioning systems.
- Apply ACCA Manuals J, H, and N to HVAC systems.
- Apply proper mechanical safety standards.

Certificate Requirements

Fall Semester

Code	Title	Hours
CMGT 100	Industrial Safety/OSHA-30	3
HVAC 105	HVAC Fundamentals*	4
HVAC 110	Electrical Fundamentals*	4
HVAC 136	Heating System Fundamentals*	3
HVAC 167	Sheet Metal Layout and Fabrication*	3
Total Hours		17

Spring Semester

Code	Title	Hours
COMS 155	Workplace Skills	1
HVAC 164	EPA 608*	1
HVAC 188	Load Calculation and Duct Design*	3



HVAC 202	Cooling Systems*	4
HVAC 251	HVAC Installation and Start-up Procedures*	4
HVAC 278	Advanced Electrical Systems*	3
Total Hours		16

Total Program Hours: 33

* This course has registration requirements.