

HVAC/Sustainable Building Engineering Technician AAS

AAS Degree: EPC 703

Requirements Effective Fall 2016

Program Planning Guide

Program Description: Students completing the HVAC/Sustainable Building Engineering Technician degree will be qualified to work in multiple industries in the roles of designing, operating and inspecting HVAC systems. Additionally, students will be able to smoothly transition into the Sustainable Building Technologies BAS Program at South Seattle College.

Prerequisites: Many classes have prerequisites. Prerequisites are those classes that prove eligibility for entry-level classes by testing or by having satisfied prior course work. Course work earned at other institutions must be unofficially evaluated or approved by a program advisor before registering. Courses in this degree with pre-requisites are marked with an asterisk (*). See catalog for more information.

HVAC/Sustainable Building Engineering Technician Degree Prerequisites: Placement into English 097/098 or higher or equivalent. Test into Math 098 or higher, or have taken an equivalent or higher level class. BUS 169.

Note: Advanced placement testing, work experience, and transfer of credits may result in course waivers, credit transfer, and advanced placement.

Program Requirements		
Course Number	General Education/Related Instruction Requirements (20 credits)	Credit Hours
EET 109	Mathematical Applications for Circuit Analysis	5
ENGL& 101	English Composition I	5
BUS 236	Interpersonal Communications for the Workplace	5
ENVS& 100, or SOC& 101 or other US/GS	Survey of Environmental Science Race and Ethnic Relations in the US	5
Course Number	Degree Requirements (72 credits)	
ENV 170	Energy and Resources: Now and Future	5
EET 160	Introduction to Electricity and Electronics	5
HVC 101*	Essentials of HVAC	5
HVC 220*	Green HVAC	3
HVC 226*	HVAC Electronics and Control Systems I	5
HVC 251*	Load Estimation for HVAC Systems	5
HVC 254*	Sustainable Urbanism and Architecture	5
HVC 258*	Principles of Passive Building Design	5
HVC 260*	HVAC Airside Systems	5
HVC 261	HVAC Hydronic Systems	5
ENGL&235	Technical Writing	5
TDR 100	Basic BIM for Design & Construction	5
TDR 101*	Intermediate BIM for Design & Construction	5
TDR 102*	Advanced BIM for Design & Construction	5
TDR 103*	Energy Analysis for BIM	4

Program Outcomes:

Students will be able to:

- Assist engineers to design, develop and test HVAC machinery and equipment.
- Design specialized or customized equipment, machines, or structures.
- Prepare specifications, designs, or sketches for machines, components, or systems related to the generation, transmission, or use of HVAC equipment
- Provide technical support to other employees regarding mechanical design, fabrication, testing, or documentation.

What Skills do I need to be successful in this field?

- Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.
- Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.
- Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

What are some potential job titles?

- HVAC Project Manager
- HVAC Product Applications Specialist
- HVAC Systems Designer
- Energy Systems Manager
- Facilities Engineer
- Engineering Technicians
- Energy Analyst

Wages, employment trends and pathways

\$29.60 hourly, \$61,580 annual, projected job opening 2014- 2024 17,000

Suggested Course Sequence: This program of study is outlined by quarter, and courses should be taken in the indicated sequence. However, it should not be concluded that students will always proceed through their program of study exactly as prescribed here. The number of quarters listed here is minimal. Not all courses are offered every quarter. Individual student experiences, educational and training background, and personal schedules and demands all may affect the time it takes to finish this program. Summer quarter is considered part of the full time program.

Program Entry Prerequisites

Course Number	Required Courses	Lecture Hours	Lab Hours	Credit Hours	Total Credits
	Placement into English 097/098 or higher				
	Test into MATH 098 (or higher), or successful completion of equivalent (or higher) class				
BUS 169	Using Computers in Business	5		5	5

First Quarter Fall/Spring

Course Number	Required Courses Suggested Sequence	Lecture Hours	Lab Hours	Credit Hours	Total Credits
HVC 101	Essentials of HVAC	44	22	5	5
EET 109	Mathematical Applications for Circuit Analysis	55			5
TDR 100	Basic BIM for Design & Construction	44	22	5	5
Total					15

Second Quarter Winter/Summer

Course Number	Required Courses Suggested Sequence	Lecture Hours	Lab Hours	Credit Hours	Total Credits
EET 160	Introduction to Electricity and Electronics	44	22	5	5
<i>HVC 251*</i>	Load Estimation for HVAC Systems	55		5	5
TDR 101	Intermediate BIM for Design & Construction	44	22	5	5
Total					15

Third Quarter Spring/Fall

Course Number	Required Courses Suggested Sequence	Lecture Hours	Lab Hours	Credit Hours	Total Credits
TDR 102	Advanced BIM for Design & Construction	44	22	5	5

HVC 258	Principles of Passive Building Design	55			5
HVC 226	HVAC Electronics and Control Systems	44	22		5
Total					15

Fourth Quarter Summer/Winter

Course Number	Required Courses Suggested Sequence	Lecture Hours	Lab Hours	Credit Hours	Total Credits
TDR 103	Energy Analysis for BIM	22	22	4	4
HVC 220	Green HVAC	27.5	11	3	3
ENV 170	The Future of Energy	55		5	5
ENG 101	English Composition I	55			5
Total					17

Fifth Quarter Fall/Spring

Course Number	Required Courses Suggested Sequence	Lecture Hours	Lab Hours	Credit Hours	Total Credits
ENG&235	Technical Writing	55		5	5
BUS 236	Interpersonal Communication for the Workplace	55		5	5
HVC 254	Sustainable Urbanism and Architecture	44	22	5	5
Total					15

Sixth Quarter Winter/Summer

Course Number	Required Courses Suggested Sequence	Lecture Hours	Lab Hours	Credit Hours	Total Credits
HVC 260*	HVAC Airside Systems	55		5	5

HVC 261*	HVAC Hydronic Systems	55		5	5
ENV 150 or SOC 150 or other US/GS	Environmental Issues and Problems in the US	55		5	5
Total					15

Program Contact

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Program Website

<https://northseattle.edu/programs/HVAC>

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