

# HVAC IIIA

HVAC - 2310 002

## Course Description

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Prereq: HVAC 1120. Electron theory, AC and DC current, Ohm's law, series and parallel circuits, operation of gas furnaces, basic heat and cool controls and balance equipment. ICE Residential and Light Commercial Air-Conditioning and Heating Certification tests.

## Course Student Learning Outcomes

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- Students will learn basic electricity in AC and DC fundamental principles of parallel circuits, heating and cooling controls. Operation of gas furnaces and AC units including balancing of equipment. ICE Residential and Light Commercial Air-Conditioning and Heating Certification Tests.
- The student will learn the necessary trade vernacular to communicate effectively with customers, other trades people, and suppliers.
- Students will learn the mathematic concepts necessary to perform calculations pertaining to basic electrical calculations.

## Engagement Plan

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Example language:

- I will respond to email within 24 hours. The best way to contact me is via the Canvas Inbox, as I will prioritize this email over other modes of communication.

## Required Text or Materials

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**Title: Heating, Ventilating, and Air Conditioning, Level 3, 5th edition**

**ISBN:** 0-13-518510-6

**Publisher:** NCCER/Pearson

**Title: Core Essentials**

**Subtitle:** Preparing for the NATE Exam

**ISBN:** 978-1-61607-116-5

**Publisher:** RSES

For more information on textbook accessibility, contact Accessibility & Disability Services at [ads@slcc.edu](mailto:ads@slcc.edu).

## Brief Description of Assignments/Exams

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### **August 27, 2025**

HVAC IIIA Introduction

Math Review

Canvas—Module 1 Assignments and quizzes.

### **September 3, 2025**

Module 12 Section 1 The Technician's Role in Customer Relations

Module 12 Section 2 Handling Service Calls

### **September 10, 2025**

Module 12 Review

Electrical HVAC Control Symbols and Air-Cooled Chiller Control Diagram

### **September 17, 2025**

Module 12 Exam

Module 4 Section 1 Heat Pump Operating Cycles

Module 4 Section 2 Heat Pump Operating Sequences

Canvas—Module 4 Assignments and quizzes.

**September 24, 2025**

Heat Pump Lab

**October 1, 2025**

Module 4 Section 3 Testing and Troubleshooting Heat Pumps

Module 4 Review

Module 5 Section 1 Troubleshooting Gas Heating Components

Canvas—Module 5 Assignments and quizzes.

**October 8, 2025**

Module 4 Exam

Module 5 Section 2 Infrared Gas-Fired Heaters

Module 5 Section 3 Gas Combustion Analysis

**October 15, 2025**

Module 5 Review

Lab Activities: Combustion Analysis

**October 22, 2025**

Module 5 Exam

Module 6 Section 1 Oil-Fired Heating Systems

Canvas—Module 6 Assignments and quizzes.

**October 29, 2025**

Module 6 Section 2 Servicing Oil Heating Systems

Module 6 Section 3 Oil Furnace Troubleshooting

**November 5, 2025**

Module 6 Review

Module 9 Section 1 Water and Movement

Canvas—Module 9 Assignments and quizzes.

**November 12, 2025**

Module 6 Exam

Module 9 Section 2 Commercial Hot-Water Heating System Components

**November 19, 2025**

Module 9 Section 3 Chilled-Water Systems

Module 9 Review

Module 10 Section 1 Steam-Related Fundamentals of Water

Module 10 Section 2 Basic Steam System Cycle and Operational Components

Lab: Chillers, Boiler, and Primary/Secondary Piping/Pumping.

**November 26, 2025** No School—Thanksgiving Holiday

**December 3, 2025**

Module 9 Exam

Module 10 Section 3 Steam System Valves and Piping

Module 10 Section 4 Steam Traps and Strainers

Module 10 Review

Canvas—Module 10 Assignments and quizzes.

**December 10, 2025**

## Module 10 Exam

Course Review and Final Exam Preparation

**December 17, 2025** Final Exam

## Assignment Schedule

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Due Date	Assignment Name	Assignment Type	Points
	<a href="#">Introduce Yourself</a>	Discussion	0
	<a href="#">Introduce Yourself</a>	Discussion	0
	<a href="#">Introduce Yourself</a>	Discussion	0
	<a href="#">Module 12 Quiz-- NATE Core Chapter 1- Soft Skills</a>	Quiz	21
	<a href="#">Module 12--NATE Core Mathematics</a>	Quiz	20
	<a href="#">Module 4-- Troubleshooting Heat Pumps</a>	Quiz	41
	<a href="#">NATE Core Chapter 2- -Tools Review Quiz</a>	Quiz	55
	<a href="#">NATE Core Chapter 3- -Safety</a>	Quiz	50
	<a href="#">NATE Core Chapter 4- -Heat and Matter</a>	Quiz	42
	<a href="#">NATE Core Chapter 5- -Electrical Fundamentals</a>	Quiz	45

Due Date	Assignment Name	Assignment Type	Points
	<a href="#">NATE Core Chapter 6--Transformers and Motors</a>	Quiz	45
	<a href="#">NATE Core Chapter 7--Electrical Diagrams</a>	Quiz	31
	<a href="#">NATE Core Chapter 8--Test Instruments (Electrical)</a>	Quiz	30
	<a href="#">NATE Core Preparation Quiz</a>	Quiz	100
	<a href="#">Pearson Online Assignments for Module 10</a>	Assignment	58
	<a href="#">Pearson Online Assignments for Module 12</a>	Assignment	20
	<a href="#">Pearson Online Assignments for Module 4</a>	Assignment	41
	<a href="#">Pearson Online Assignments for Module 5</a>	Assignment	34
	<a href="#">Pearson Online Assignments for Module 6</a>	Assignment	41
	<a href="#">Pearson Online Assignments for Module 9</a>	Assignment	42
9/8/25	<a href="#">Syllabus Quiz</a>	Quiz	15

## Grading Scale

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**Your final grade for the semester will be calculated as follows:**

Assignments and Labs 35% of final grade

Module Exams 40% of final grade

Final Exam 25% of final grade

**The following grading standards will be used in this class:**

Grade	Range
A	100% to 94%
A-	< 94% to 90%
B+	< 90% to 87%
B	< 87% to 84%
B-	< 84% to 80%
C+	< 80% to 77%
C	< 77% to 74%
E	< 74% to 0%

## How to Navigate to Canvas

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## Institutional Policies

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As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities, academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

For more information, navigate to the Institutional Policies tab on the [Institutional Syllabus](#) page.

## Learning Support and Tutoring Services

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We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, visit the [Institutional Syllabus](#) page under the Tutoring and Learning Support tab. We encourage you to take advantage of these resources to help you succeed in your studies. If you have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

## Advising and Counseling Support Services

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At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the challenges of college life. To learn more about the resources available to you and how to access them, visit the [Institutional Syllabus](#) page under the Advising and Counseling Support Services tab. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

## Student Academic Calendar

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As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

[SLCC Student Academic Calendar](#)