HVAC IIA

HVAC - 1210 002

Course Description

Installation principles, determine heat and cooling loads, calculate and design ducts, identify filtration methods, and install residential systems. Rocky Mountain Gas Association (RMGA) installation test.

Course Student Learning Outcomes

- Learn proper methods of calculating and designing duct systems, heating and cooling loads, and requirements in residential systems. Students will be prepared to pass Rocky Mountain Gas Association Installation Certification Test.
- Learn the necessary trade vernacular to communicate effectively with customers, other trades people, and suppliers.
- Learn the mathematic concepts necessary to perform calculations pertaining duct designing and selecting and determining heating and cooling loads.

Engagement Plan

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

Title: Heating, Ventilating, and Air Conditioning, Level 2, 5th edition

ISBN: 0-13-518512-2
Publisher: NCCER/Pearson

For more information on textbook accessibility, contact Accessibility & Disability Services at ads@slcc.edu.

Brief Description of Assignments/Exams

The following schedule will be our guide to learning this semester. As usual, there are assignments in Pearson for each module. Due to their nature, scheduled labs will be performed as a class and cannot be made up.

August 26, 2025

HVAC IIA Introduction

Module 1 Section 1 AC Power Generation and Uses

Canvas—Module 1 Assignments and quizzes.

September 2, 2025

Module 1 Section 2 Transformers

Module 1 Section 3 Induction Motors

Module 1 Section 4 Testing AC Components

September 9, 2025

Module 1 Review

Electrical Measuring Lab

Module 2 Section 1 Compressor Types and Operating Characteristics

September 16, 2025

Module 1 Exam

Module 2 Section 2 Compressor Capacity Control

Module 2 Section 3 Common Causes of Compressor Failures

Canvas—Module 2 Assignments and quizzes.

September 23, 2024

Module 2 Section 4 Compressor Protection Devices

Module 2 Section 5 Hermetic Compressor Analysis

Module 2 Review

September 30, 2025

Module 2 Exam

Module 3 Section 1 Refrigerant Characteristics

Module 3 Section 2 Refrigerant Types and Classifications

Canvas—Module 3 Assignments and quizzes.

October 7, 2025

Module 3 Section 3 Pressure-Temperature Charts

Module 3 Section 4 Lubricating Oils

Module 3 Section 5 Refrigerant Conversions

October 14, 2025

Module 3 Review

Module 4 Section 1 Refrigerant Leak Testing and Location

Module 4 Section 2 Refrigerant Containment

Canvas—Module 4 Assignments and quizzes

October 21, 2025

Module 3 Exam

Module 4 Section 3 Refrigerant Circuit Evacuation

Module 4 Section 4 Refrigerant Charging

October 28, 2025

Module 4 Review

Lab Activities: Refrigerant Leak Detection, Refrigerant Recovery, Circuit Evacuation, and Refrigerant Charging.

November 4, 2025

Module 4 Exam

Module 5 Section 1 Metering Devices

Module 5 Section 2 Fixed Metering Devices

Module 5 Section 3 Expansion Valves

Canvas—Module 5 Assignments and quizzes.

November 11, 2025

Module 5 Section 4 Expansion Valve Selection and Installation

Module 5 Review

Module 5 Lab Activities: Metering Devices

November 18,2025

Module 5 Exam

Module 12 Section 1 Indoor Air Quality

Module 12 Section 2 Humidity Control

Canvas—Module 12 Assignments and quizzes.

November 25, 2025

Module 12 Section 3 Air Cleanliness Equipment

Module 12 Section 4 Equipment Used to Provide Fresh Air

Module 12 Review

December 2, 2025

Module 12 Exam

December 9, 2025

Course Review and Final Exam Preparation

December 16, 2025 Final Exam

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Introduce Yourself	Discussion	0
	Introduce Yourself	Discussion	0
	Introduce Yourself	Discussion	0
	Pearson Online Assignments for Module 1	Assignment	44
	Pearson Online Assignments for Module 12	Assignment	36
	Pearson Online Assignments for Module 2	Assignment	52
	Pearson Online Assignments for Module 3	Assignment	49

Due Date	Assignment Name	Assignment Type	Points
	Pearson Online Assignments for Module 4	Assignment	40
	Pearson Online Assignments for Module 5	Assignment	43
	Replacement Motor Selection	Assignment	0
9/16/25	Syllabus Quiz	Quiz	12
9/30/25	FHP Motor Selection	Quiz	34
9/30/25	Module 1 Quiz	Quiz	32
11/18/25	Refrigerant Systems and Refrigerant Metering	Assignment	43
12/2/25	Module 2 Quiz--Compressors	Quiz	45

Grading Scale

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

Institutional Policies

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

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

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

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