

Basic Refrigeration

TEAC - 1235 401

Course Description

Introduces the specialty tools used in the HVAC trade and the basic theory of the refrigeration cycle, components, and operation of refrigeration units.

Semester(s) taught: All

Course Student Learning Outcomes

- Demonstrate the math and measurement skills needed for the HVAC industry.
- Describe the proper use of tools used in the HVAC trade.
- Explain the basic refrigeration theory and characteristics of a refrigeration cycle.
- Demonstrate the operation of the basic components used in a refrigeration system.
- Explain the characteristics and applications of different refrigerant and refrigerant oils.
- Describe the process for refrigerant recovery.
- Demonstrate refrigerant system evacuation, leak detection, and system recharge.

Engagement Plan

Example language:

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

Brief Description of Assignments/Exams

Assignments and quizzes/exams are scheduled in Canvas.

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Basic Math & Measurement Lab Practical **	Assignment	37
	Basic Math and Measurements Progress Written Exam- Requires Respondus LockDown Browser	Quiz	23
	Basic Refrigeration Final Lab Practical A **	Assignment	29
	Basic Refrigeration System Lab Practical **	Assignment	33
	Basic Refrigeration System Progress Written Exam- Requires Respondus LockDown Browser	Quiz	30
	Check Your Knowledge: Chapter 10 Review Quiz ***	Quiz	20
	Check Your Knowledge: Chapter 11 Review Quiz ***	Quiz	13

Due Date	Assignment Name	Assignment Type	Points
	Check Your Knowledge: Chapter 12 Review Quiz ***	Quiz	20
	Check Your Knowledge: Chapter 13 Review Quiz ***	Quiz	18
	Check Your Knowledge: Chapter 14 Review Quiz ***	Quiz	16
	Check Your Knowledge: Chapter 15 Review Quiz ***	Quiz	20
	Check Your Knowledge: Chapter 16 Review Quiz ***	Quiz	25
	Check Your Knowledge: Chapter 2 Review Quiz ***	Quiz	14
	Check Your Knowledge: Chapter 8 Review Quiz ***	Quiz	16
	Check Your Knowledge: Chapter 9 Review Quiz ***	Quiz	20
	Check Your Knowledge: Program Orientation and Course Syllabus Quiz	Quiz	20

Due Date	Assignment Name	Assignment Type	Points
	Evacuation, Leak Detection and Recharge Progress Written Exam- Requires Respondus LockDown Browser	Quiz	31
	Fundamentals of Refrigeration Progress Written Exam- Requires Respondus LockDown Browser	Quiz	53
	Introduce Yourself	Discussion	0
	Lab 10: Temperature and Pressure	Quiz	7
	Lab 11: Basic Refrigeration Cycle	Quiz	8
	Lab 12: Other System Components	Assignment	1
	Lab 13 Refrigerants	Assignment	1
	Lab 15 Refrigerant Recovery and Recycling	Assignment	1
	Lab 16 System Evacuation, Leak Detection, and Recharging	Assignment	1
	Lab 2: Hand Tools	Quiz	24
	Lab 2a: Specialty Tools	Assignment	1

Due Date	Assignment Name	Assignment Type	Points
	Lab 8: Mathematics for Technicians	Quiz	10
	Lab 9: Basic Thermodynamic Principles	Quiz	11
	Lab Project: Compressors	Assignment	1
	Lab Project: Condensers	Assignment	1
	Lab Project: Introduction to Refrigeration	Assignment	1
	Lab Project: Metering Devices and Evaporators	Assignment	1
	Lab Project: Superheat and Subcooling Lab #1	Assignment	1
	Lab Project: Superheat and Subcooling Lab #2	Assignment	1
	Refrigerant Recovery Progress Written Exam- Requires Respondus LockDown Browser	Quiz	24

Due Date	Assignment Name	Assignment Type	Points
	Refrigerant Recovery, Evacuation, Leak Detection and Recharge Lab Practical **	Assignment	16
	Refrigerants and Refrigerant Oils Lab Practical **	Assignment	20
	Refrigerants and Refrigerant Oils Progress Written Exam- Requires Respondus LockDown Browser	Quiz	46
	Tools Progress Written Exam- Requires Respondus LockDown Browser	Quiz	40
	Written Exam Form A- Requires Respondus LockDown Browser	Quiz	67

Grading Scale

Each assignment, quiz, and exam have an assigned point value. The course grade is determined by summing all of the assignments, quizzes, and exams and dividing the sum by the total possible points. A letter grade of A , B, or E (failing) will be assigned according to the percentage of points earned and the following table:

GRADE	RANGE
A	90-100%
B	80-89%

E	Less than 80%
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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](#)