

Air Cond & Refrig Controls

TEAC - 1253 401

Course Description

Applies the fundamentals of electricity in specific HVAC applications. Residential HVAC controls, heat pumps, electrical motors and controls, variable frequency drives are emphasized. More in-depth troubleshooting and problem solving will be covered.

Semester(s) taught: All

Course Student Learning Outcomes

- Analyze, construct and apply wiring diagrams to properly control different types of residential motors.
- Analyze, construct and apply wiring diagrams to properly control different types of residential HVAC equipment including furnace, air conditioners and heat pump systems.
- Analyze, construct and apply wiring diagrams to properly control different types of light commercial equipment motors, including variable motor drives.
- Evaluate, diagnose and correct problems in HVAC equipment for proper system operation.

Engagement Plan

We will respond to email within 24 hours

Brief Description of Assignments/Exams

Assignments and quizzes/exams are scheduled in Canvas.

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Check Your Knowledge: Chapter 15 Review Quiz ***	Quiz	26
	Check Your Knowledge: Chapter 16 Review Quiz ***	Quiz	29
	Check Your Knowledge: Chapter 25 Review Quiz ***	Quiz	20
	Check Your Knowledge: Chapter 26 Review Quiz ***	Quiz	10
	Check Your Knowledge: Chapter 27 Review Quiz ***	Quiz	18
	Final Competency Exam Form A- Requires Respondus LockDown Browser	Quiz	36
	Final Competency Lab Practical Form A **	Assignment	90
	Introduce Yourself	Discussion	0
	Introduction to Residential Motors Lab Practical **	Assignment	107

Due Date	Assignment Name	Assignment Type	Points
	Introduction to Residential Motors Written Progress Exam- Requires Respondus LockDown Browser	Quiz	40
	Lab Project 25: Induction Motors	Assignment	1
	Lab Project 26 Electromagnetic Control Devices	Assignment	1
	Lab Project 27 Motor Controls	Assignment	1
	Lab Project: 10 Compressor Checkout	Assignment	1
	Lab Project: 15-5 Troubleshooting Heating Controls	Assignment	1
	Lab Project: 16-1 Identification of HVAC Equipment	Assignment	1
	Lab Project: 16-2 Identification of Electrical Components Used in Conditioned Air Systems	Assignment	1
	Lab Project: 24 Volt Pump Down Wiring	Assignment	1

Due Date	Assignment Name	Assignment Type	Points
	Lab Project: Build Direct Start Box	Assignment	1
	Lab Project: Capacitor-Start AC Motors	Assignment	1
	Lab Project: Compressor Direct Start Test	Assignment	1
	Lab Project: Current Relay Wiring	Assignment	1
	Lab Project: Drawing and Wiring Control Circuits	Assignment	1
	Lab Project: Electronically Commutated Motors (ECM)	Assignment	1
	Lab Project: HVAC Wiring Troubleshooting Trainer	Assignment	1
	Lab Project: Motor Controls Wiring	Assignment	1
	Lab Project: Permanent-Capacitor and Two-Capacitor Motors	Assignment	1
	Lab Project: Potential Relay Wiring	Assignment	1

Due Date	Assignment Name	Assignment Type	Points
	Lab Project: Residential Furnace and AC Troubleshooting	Assignment	1
	Lab Project: Single Phase Compressor Controls	Assignment	1
	Lab Project: Solid State Relay	Assignment	1
	Lab Project: Split-Phase AC Motors	Assignment	1
	Residential HVAC Equipment Controls Lab Practical **	Assignment	8
	Residential HVAC Equipment Controls Written Progress Exam- Requires Respondus LockDown Browser	Quiz	20
	Residential HVAC Equipment Electrical Troubleshooting Written Progress Exam- Requires Respondus LockDown Browser	Quiz	20
	Residential Motor Control Lab Practical **	Assignment	17

Due Date	Assignment Name	Assignment Type	Points
	Residential Motor Control Written Progress Exam- Requires Respondus LockDown Browser	Quiz	50

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%

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](#)