

## Course Syllabus

### HVACR 25

#### Energy Efficient Residential, Commercial and Industrial Air Conditioning

**Course Description:** This course covers energy efficient green technology, (high efficiency) and advanced residential, commercial and industrial air conditioning. **Lab activities include:** the use of air conditioning test equipment, installation, repair and maintenance of various types of air conditioning systems. Students will learn various techniques of troubleshooting electrical and mechanical problems.

**Instructor:** Timothy Muckey

**Phone:**

**Email:** tmuckey@elcamino.edu

**Office Hours:** 9-11 AM M,W

**Text:** Refrigeration & Air Conditioning Technology

**By:** Whitman, Johnson, Tomczyk & Silberstein. 7<sup>th</sup> Edition

**Lecture:** 6:00-9:10 PM W

**Lab:** 6:00-9:10 PM M

**Materials:** Pen, Pencil, Paper

**SLO Statement 1:** After reading the textbook and participating in class discussions, students will apply their knowledge of appropriate lab practices, concepts and theories to an operating 2 ton 13 SEER Air Conditioning Packaged Unit. Students will take air temperature Readings, compressor amperage draw, subcooling and superheat readings and apply the data to the appropriate lab exercise.

**SLO Statement 2:** After reading the textbook and participating in classroom discussions, students will apply their knowledge of how to check an A/C unit by using their senses to see if it operating close to what it should be. Instruments and tools will determine if the A/C units are operating correctly. These are quick checks to see if a unit is not operating.

**SLO Statement 3:** After reading the textbook and participating in classroom discussions, students will apply their knowledge of how to properly charge an A/C unit.

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#### Grading:

<b>Attendance</b>	<b>25%</b>
<b>Test &amp; Quizzes</b>	<b>25%</b>
<b>Lab Assignments</b>	<b>25%</b>
<b>Final Project (Explained in class)</b>	<b>25%</b>

**\*Notes:** *No late testing*

**Note:** *If you choose to drop out of class, it will be your responsibility to drop the class or you will be give an "F" grade at the end of the semester*

#### Course Outline

Units#	Page	Description
2	27-33	Matter and Energy
13	310-319	Introduction to Automatic Controls
16	376-393	Advanced Automatic Controls
35	1016-1029	Comfort and Psychometrics
37	1059-1055	Air Distribution and Balance
40	1181-1194	Typical operating conditions
47	1438-1472	Chilled water systems
Open	Team Research	Alternative HVAC

**Note:** Questions at the end of each unit must be completed, questions and answers written out. Notebooks may be used when taking quizzes and test, so it will be your responsibility to take notes during lecture.

#### Student Orientation

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Participate in Orientation with the Online Orientation through MyECC or in the Matriculation Group academic counseling sessions for students new to college. Students will meet with a counselor in the Matriculation Groups to prepare an Educational Plan for the semester. Students who complete Online Orientation must bring in the confirmation page to make a 30 minute counseling appointment for an Educational Plan.

#### **ECC STUDENT SERVICES CENTER BUILDING**

(Please see the Activities Center and Special Resource Center ECC web page for hours of operation and services offered)