

Course Syllabus

HVACR 23 - Commercial Refrigeration Applications
Course 7115 - Fall 2014 August 26 through December 11, 2014

Course Description: This course explores refrigeration theory, characteristics of refrigerants, temperature and pressure, tools and equipment, soldering, brazing, commercial refrigeration systems, system components, compressors, evaporators, and metering devices. Students will learn to charge commercial systems with new Environmental Protection Agency (EPA) refrigerants and evaluate the proper operation of systems. Troubleshooting techniques are explained with the use of wiring diagrams and electric meters.

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Office hours: By appointment

Text: Modern Refrigeration and Air Conditioning

By: Andrew D Althouse, Carl H Turnquist, Alfred F Bracciano, Daniel C Bracciano, Gloria C Bracciano

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Lecture: Tuesday 6:30 PM to 9:40 PM

Lab: Thursday 6:30 PM to 9:40 PM

El Camino College Mission Statement: *El Camino College offers quality, comprehensive educational programs and services to ensure the educational success of students from our diverse community.*

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 operating low temperature walk-in freezer. Students will check proper freezer temperatures, amperage draw on the operating compressor, subcooling, and superheat temperatures.

SLO Statement 2: Students completing this course will apply their knowledge to the application, service, and testing of special refrigeration system components.

SLO Statement 3: Students completing this course will apply their knowledge to service and troubleshooting using electrical diagrams and schematics specific to commercial refrigeration.

Attendance: Attendance in the classroom, as well as, the lab is critical components to success in this course. Like in the work place, attendance is required. Absences from that exceed 10% of the scheduled class meeting times may be dropped from the class. Students are expected to be on time for class and lab, fully prepared. A student who registers for a class and never attends is still responsible for dropping the class. It is the responsibility of the student to officially drop a class by the dead line date.

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Grading:

Attendance	25%
Test & Quizzes	25%
Lab Assignments	25%
Final Exam	25%

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

Course Outline

Chapter	Page	Description
42	1007	Overview of Commercial Refrigeration Systems - Applications, Commercial and Industrial
43	1039	Special Refrigeration Systems and Applications
44	1059	Commercial Refrigeration Systems - System Configurations
45	1077	Commercial Refrigeration Systems - High Side Components
46	1131	Commercial Refrigeration Systems - Low Side Components
47	1163	Commercial Refrigeration Systems - Piping
48	1177	Understanding Heat Load and System Thermodynamics
49	1207	Commercial Refrigeration Component Selection
50	1227	Installing Commercial Systems
51	1251	Troubleshooting Commercial Systems - System Diagnosis
52	1291	Troubleshooting Commercial Systems - Component Diagnosis
53	1317	Servicing Commercial Systems

Homework: Questions at the end of each unit must be completed with questions and answers written out and are due the day of a quiz, and will be counted as part of your overall grade for quizzes.

Test Policy: Notes may be used when taking quizzes and tests unless otherwise told in advance. It will be to your advantage to take thorough notes during lecture and keep your notes organized in a binder.

Lab: Students are expected to keep the lab clean and in orderly condition. When lab is complete, all tools are to be returned to the tool crib, equipment is to be put back together with all missing screws and panels in their place. We treat our lab like we would treat a paying customer. Students are expected wear safety glasses at all times when working in the lab

Student Orientation: Participate in orientation with the Online Orientation through MyECC or in the Matriculation Group academic counseling sessions for students, new to the 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.

Academic Honesty: El Camino College places a high value on the integrity of its student scholars. When an instructor determines that there is evidence of dishonesty in any academic work (including, but not limited to cheating, plagiarism, or theft of exam material), disciplinary action appropriate to the

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misconduct as defined in BP 5500 may be taken. A failing grade on an assignment in which academic dishonesty has occurred and suspension from class are among the disciplinary actions for academic dishonesty (AP 5520). Students with any questions about the Academic Honesty or discipline policies are encouraged to speak with their instructors in advance.

Special Accommodations: Any student who has a disability and/or special need should alert the instructor by the second week of the semester so that special accommodations can be made.

ADA Compliance: Accommodations: It is the policy of the El Camino Community College District to encourage full inclusion of people with disabilities in all programs and services. Students with disabilities who believe they may need accommodations in this class should contact the campus Special Resource Center at 310-660-3295 as soon as possible. This will ensure that students are able to fully participate.

ECC STUDENT SERVICES CENTER BUILDING: (Please see the Activities Center and Special Resource Center ECC webpage for hours of operation and services offered)