

CYPRESS COLLEGE

Course Syllabus – Fall 2008

Subject Matter Area:	Air Conditioning and Refrigeration Course
Course No.:	111
Course Title:	Electrical Controls for Air Conditioning & Refrigeration
Units:	4
Hours lecture:	4
Hours out of class	
Preparation:	8
Prerequisite:	Concurrent enrollment in AC/R 112

Instructor Name:	Richard Hock
Office hours:	Mon., Tues. 11am-12 pm, 5 – 6 pm, Wed. 1-2pm
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Course Description & Instructional Objective:

This course includes the basic concepts of electrical principles as used in air conditioning and refrigeration. Topics include schematic reading and drawing, Ohm's Law, Dual voltage circuits, relays, transformers, low voltage thermostats, single-phase motor starting and electrical safety.

Upon completion of this course, the student will:

1. Have a basic understanding of electricity, electrical circuits and the electrical components that are found in air conditioning and refrigeration equipment.
2. Be able to convert a manufacturer's wiring diagram into a ladder schematic diagram.
3. Understand and analyze a given piece of equipment and draw a ladder schematic necessary to perform a specific task with a full description of the sequence of operation.
4. Be able to convert a written electrical objective into a ladder schematic diagram necessary to perform a specific task.
5. Understand and analyze a manufacturer's schematic and use it to troubleshoot air conditioning and refrigeration systems.

Textbooks:

Refrigeration & Air Conditioning Technology, 6th Edition by Whitman, Johnson, Tomczyk and Silberstein

AC/R 111 & 112 Course Notes Outline and Laboratory Practice 2008 by Richard Hock

Supplies: Calculator (Standard math functions)
Straight Edge (ruler)
USB Flash drive memory stick

Computer Skills:

To be successful in this course you will need to be comfortable browsing the web, word processing, sending and receiving emails, and saving your work on a computer or USB flash drive memory stick.

Computer Equipment:

On-line activities and assignments will be assigned. You will need to have internet access and a valid email account. On campus computers for online access are available in the Air Conditioning Laboratory, Library Learning Resource Center and Writing Center in the Humanities Building. (NOTE: District issued Photo ID required at all computer labs!)

Instructional Methodologies:

1. Lectures and note taking.
2. Critique sessions.
3. Hands on demonstrations with equipment and instruments.
4. Homework, written and schematic drawing assignments.
5. Media presentations.
6. On-line activities.

Multiple Methods of Evaluation:

1. Homework: drawings, reading and on-line exercises.
2. Weekly quizzes consisting of schematic drawing, problem solving, multiple choice, fill-in-the blank questions, true/false answers, oral answers to oral questions.
3. Midterm exam consisting of schematic drawing, problem solving, multiple choice, fill-in-the blank questions, true/false answers, oral answers to oral questions.
4. Final exam consisting of schematic drawing, problem solving, multiple choice, fill-in-the blank questions, true/false answers, oral answers to oral questions.
5. Work ethic grade will be evaluated on: class participation; attendance; on-time arrival to class; promptness of project completion; neatness and pride of workmanship of all assignments; end of class clean-up responsibilities; classroom attitude; willingness to help other students requesting extra help and modeling safety in rules and procedures.

Balance of Syllabus will be distributed on the first day of scheduled class.