



## COURSE SYLLABUS

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**COURSE: AHR 235 REFRIGERATION DESIGN**

**HOURS:** Lecture: 2 Lab/Shop: 2 Work Exp/Clinical: 0 Credits: 3

### COURSE DESCRIPTION:

This course covers the principles of commercial refrigeration system operation and design. Topics include walk-in coolers, walk-freezers, system components, load calculations, equipment selection, defrost systems, refrigerant line sizing, and electric controls. Upon completion, students should be able to design, adjust, and perform routine service procedures on a commercial refrigeration system.

**PREREQUISITE(S):** AHR 110

**COREQUISITE(S):** None

### TEXTBOOK(S) & OTHER SPECIAL REQUIREMENTS:

Open Educational Resources (OER) are listed in the course Moodle.

### STUDENT LEARNING OUTCOMES:

Upon successful completion of this course, the student will be able to:

1. Plan properly for commercial refrigeration choices, sizing/load requirements.
2. Recognize the differences between air-cooled, water cooled, and refrigerant cooled systems.
3. Determine the best choice of refrigerants, piping, and controls.
4. Become familiar with manufacturers, design temperatures, and load requirements, insulation factors, specific heat of various products.
5. Design, and trouble-shoot the electrical system of walk-in coolers, freezers, grocery cases, ice machines.
6. Design location of evaporator and condensing units.
7. Design location of electrical controls and coordinate with other trades, such as electrical, plumbing, and construction.
8. Be able to find information on the internet on various pieces of equipment including Ice cream machines, ice making machines, condensing units and evaporators choosing correct pipe size, insulation, routing, and the need for traps, and bracing.
9. Demonstrate a good understanding of industry practices for domestic and international manufacturers of refrigeration condensing units, and controls.

**\*\*\*Please refer to the online version of the Richmond Community College Program & Course Catalog and the Student Handbook for current academic and general information.**