

SYLLABUS

DIVISION: Business and Engineering Technology

REVISED: Summer/2014

CURRICULA IN WHICH COURSE IS TAUGHT: Air Conditioning & Refrigeration

COURSE NUMBER AND TITLE: AIR 111 01/50 A/C and Refrigeration I

CREDIT HOURS: 3 **HOURS/WK LEC:** 2 **HOURS/WK LAB:** 2 **LEC/LAB COMB:** 4

I. CATALOG DESCRIPTION: Studies refrigeration theory, tools and equipment, soldering, brazing, refrigeration systems, systems components, compressors, evaporators, metering devices. Provides laboratory application of refrigerators and freezers.

II. RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES:

- Acquire an understanding of the basic fundamentals of Refrigeration
- Acquire an understanding of how to use different types of torches
- Gain an understanding of tools used in refrigeration
- Gain an understanding of the components in a refrigeration system

III. REQUIRED BACKGROUND/PREREQUISITIES:

- Approval

IV. COURSE CONTENT:

- Refrigeration Cycle
- Soft Soldering and Brazing
- HVAC Tools
- Parts used in a Refrigeration System

V. THE FOLLOWING GENERAL EDUCATION OBJECTIVES WILL BE ADDRESSED IN THIS COURSE

- **Communications**
 - 1.1 understand and interpret complex materials;
 - 1.3 use standard English;
 - 1.5 use listening skills; and
- **Critical Thinking**
 - 2.4 weigh evidence and decide if generalizations or conclusions based on the given data are warranted;
 - 2.5 determine whether certain conclusions or consequences are supported by the information provided; and
 - 2.6 use problem solving skills.
- **Quantitative Reasoning**
 - 6.1 use logical and mathematical reasoning within the context of various disciplines;
 - 6.2 interpret and use mathematical formulas;
 - 6.3 interpret mathematical models such as graphs, tables and schematics and draw inferences from them;
 - 6.4 use graphical, symbolic, and numerical methods to analyze, organize, and interpret data;

VI. LEARNER OUTCOMES**VII. EVALUATION**

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| Refrigeration Cycle <ul style="list-style-type: none">• Understanding how of the refrigeration cycle works• Ability to draw and complete a basic refrigeration cycle• Identifying the parts of a refrigeration cycle• Identify and solve problems with the refrigeration cycle | Evaluation method Written test Completed handouts |
| Soft Soldering and Brazing <ul style="list-style-type: none">• Understand how to operate the different types of torches• Ability to design, layout, and solder leak free copper projects• Identify the different types of solder used | Evaluation method Lab exercises Lab Test |
| HVAC Tools <ul style="list-style-type: none">• Understand the different types of tools used in Refrigeration• Ability to use tools properly• Ability to read a set of Refrigeration Gauges• Ability to cut and flare copper tubing properly• Ability to leak test, evacuate, and recharge refrigeration system | Evaluation method Lab exercises Lab Test Written test |
| Parts used in a Refrigeration Cycle <ul style="list-style-type: none">• Understanding of the main components of a refrigeration system• Ability to understand how each component works• Identify and label components• Ability to understand different types of evaporator and condenser coils | Evaluation method Lab exercises In class assignments Written test |