

SYLLABUS

DIVISION: Business and Engineering Technology

REVISED: Fall 2013

CURRICULA IN WHICH COURSE IS TAUGHT: Air Conditioning and Refrigeration

COURSE NUMBER AND TITLE: AIR 165 Air Conditioning Systems I

CREDIT HOURS: 3 **HOURS/WK LEC:** 2 **HOURS/WK LAB:** 3 **LEC/LAB COMB:** 5

I. CATALOG DESCRIPTION: AIR 165 Air Conditioning Systems I (3 cr.)--Introduces comfort survey, house construction, load calculations, types of distribution systems, and equipment selection. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

II. RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES:

- Acquire an understanding of the different types of heat and heat transfer
- Gain knowledge on the different types of building components
- Ability to understand and compute heat loss & gain calculations
- Understand duct sizing

III. REQUIRED BACKGROUND/PREREQUISITIES:

- None

IV. COURSE CONTENT:

- Types of heat
- Methods of heat transfer
- House construction
- Heat loss calculations
- Duct sizing

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

1. Communication

- 1.1 understand and interpret complex materials;
- 1.3 use standard English;
- 1.5 use listening skills; and

2. Critical Thinking

- 2.6 use problem solving skills.

6. Quantitative Reasoning

- 6.1 use logical and mathematical reasoning within the context of various disciplines;
- 6.2 interpret and use mathematical formulas;

VI. LEARNER OUTCOMES**VII. EVALUATION**

Types of Heat <ul style="list-style-type: none">• Understand different types of heat• Identify different types of heat• Ability to identify heat sources	Evaluation method Lab exercises Written test Exam
Methods of Heat Transfer <ul style="list-style-type: none">• Understand modes of Heat Transfer• Ability to calculate the effects of heat transfer• Identify the effects of heat transfer on a dwelling	Evaluation method In class assignments Written test Exam
House Construction <ul style="list-style-type: none">• Understand types of building components• Understand K,C,U,R, & F values• Identify construction values• Ability to calculate R values	Evaluation method In class assignments Written test Exam
Heat Loss Calculations <ul style="list-style-type: none">• Understand Manual J• Understand HTM values, Square Ft., & Cubic Ft.• Identify Gross & Net Wall Area• Ability to determine Heat Loss on a conditioned space	Evaluation method Lab exercises In class assignments Written test Exam
Duct Sizing <ul style="list-style-type: none">• Understand Static Pressure & FPM• Ability to compute correct duct size• Identify the different types of duct	Evaluation method Lab exercises In class assignments Written test Exam