SYLLABUS

DIVISION: Business and Engineering Technology   **REVISED:** Fall/2013

CURRICULA IN WHICH COURSE IS TAUGHT: Air Conditioning & Refrigeration
COURSE NUMBER AND TITLE: AIR 161-01 Heating, Air Conditioning, and Refrigeration
Calculations I

CREDIT HOURS: 3 **HOURS/WK LEC:** 3 HOURS**/WK LAB:** 0 LEC**/LAB COMB:** 3

I.   **CATALOG DESCRIPTION:** Introduces fractions, decimals, sign of operations, equations, Ohm's Law, subtraction, multiplication and division of signed numbers. Teaches fundamentals of algebra, expression of stated problems in mathematical form and solutions of equations.

II.   **RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES:**
- Acquire an understanding of basic math problems
- Understand division, addition, subtraction, and multiplication of whole numbers
- Understand division, addition, subtraction, and multiplication of fractions & decimal of a number
- Acquire an understanding of scientific notation
- Ability to calculate square feet and volume of a structure
- Ability to find an unknown value

III.   **REQUIRED BACKGROUND/PREREQUISTIES:**
- None

IV.   **COURSE CONTENT:**
- Introduction to math and numbers
- Common Fractions
- Decimal Fractions
- Scientific Notation
- Area and Volume

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

- **Communications**
  1.1 understand and interpret complex materials;
  1.3 use standard English;
  1.4 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.

VI.   LEARNER OUTCOMES   VII.   EVALUATION

Learner Outcomes	Evaluation
Introduction to math & numbers • Understand basic math functions • Identify positive and negative numerical values • Ability to perform basic math problems	**Evaluation method** Written test Exam
Common Fractions • Understand the different steps of operation when adding, subtracting, dividing, or multiplying • Ability to perform proper and improper fraction problems • Identify numerator and denominator	**Evaluation method** In class assignments Written test Exam
Decimal Fractions • Understand how to turn a fraction into a decimal • Ability to perform decimal math problems and what each numerical value means • Identify tenths, hundredths, thousandths place	**Evaluation method** In class assignments Written test Exam
Scientific Notation • Understand how to complete scientific notation • Ability to solve for positive and negative exponents associated with scientific notation • Identify why it is used in the field today	**Evaluation method** In class assignments Written test Exam
Area & Volume • Understand the formulas for each • Identify the difference between the two • Ability to perform basic and complex area and volume formulas for each shape	**Evaluation method** In class assignments Written test Exam