SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Heating, Ventilation, Air Conditioning & Refrigeration Technology Program
Revision Date: August 24, 2020
Syllabus Statements

I. CATALOG DESCRIPTION

Course Number:	HVAC1330
Course Title:	Residential Controls I
Prerequisite(s):	HVAC1109
Catalog Description:	Basic furnace/central air conditioning control circuits, electrical schematics, equipment components, basic installation, operational sequencing, equipment maintenance, and standard safety requirements.
Credit Hours:	2
Class Hours:	15
Lab Hours:	45
Total Contact Hours:	60

II. COURSE OBJECTIVES: *Course will:*

A. Describe forced air heating systems by classification.
B. Describe control locations and component symbols.
C. Explain basic electricity theory, pictorial wiring diagrams, and schematic (ladder) diagrams.
D. Discuss wiring, system operation, safety, and maintenance procedures for residential heating controls
E. Describe different types of thermostats, air conditioning components, and refrigeration operation.
F. Explain developing good troubleshooting techniques.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. Student Learning Outcomes: *Student will be able to:*
  1. Distinguish forced air heating systems by classification.
  2. Identify controls used on residential cooling equipment.
  3. Interpret basic electrical wiring diagrams.
  4. Recognize proper system operation, safety, and maintenance procedures for residential cooling systems and controls.
  5. Operate the different types of thermostats and cooling systems and heat pumps.
  6. Demonstrate the basis of good troubleshooting techniques.
B. General Education Learning Outcomes (GELOs)
  1. GELO #3: Critical Thinking & Problem Solving
  Outcome 1: Collect, identify, interpret and analyze data.

IV. CONTENT/TOPICAL OUTLINE

A. Forced Air Heating and Cooling Classifications & Control Locations
B. Alternating Current Circuits
C. Electrical Pictorials & Symbols
D. Schematics (Ladders) & special circuits
E. Electrical Components
F. Safety

G. Troubleshooting
H. HVAC Trainer
I. Thermostats

V. INSTRUCTIONAL MATERIALS

A. Required Text(s): Handouts given by Instructor
B. Other Resources: Manufacturers' Materials (provided by instructor)

VI. METHODS OF PRESENTATION/INSTRUCTION

A. Methods of presentation typically include a combination of the following:
1. Lectures
2. Classroom demonstrations
3. Classroom discussions
4. Instructional handouts
5. Video presentations
6. PowerPoint presentations

VII. METHODS OF EVALUATION

A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
1. Quizzes
2. Lab Projects
3. Final Comprehensive Test

VIII. SPECIFIC COURSE REQUIREMENTS

A. Student must meet all of the following to receive a passing grade:
1. Achieve a passing grade of "D" (60%) or higher, based on SCC grading scale.
2. Submit own work. Students turning in homework, reports, field notes, or calculations by someone other than themselves will receive 0% and be referred to the Division Dean and Dean of Students for further disciplinary action. Consequences can include failing the course.
3. Demonstrate attitude, skills, and character commensurate with industry standards.