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:	HVAC2649
Course Title:	Commercial HVAC Systems
Prerequisite(s):	HVAC1461
Catalog Description:	Theory and practices of commercial air conditioning system operation. Basic fundamentals of human comfort, psychrometrics, geothermal systems and applications.
Credit Hours:	3.0
Class Hours:	30
Lab Hours:	45
Total Contact Hours:	75

II. COURSE OBJECTIVES: *Course will:*

A. Develop an understanding of the principles and engineering practices as applied to the installation and maintenance of a commercial HVAC system.
B. Explain the properties of air and the need for proper indoor air quality.
C. Develop the knowledge to troubleshoot commercial HVAC systems and the controls that operate them.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. Student Learning Outcomes: *Student will be able to:*
  1. Analyze a commercial HVAC system and proper troubleshooting procedures.
  2. Develop a preventative maintenance program for HVAC systems.
  3. Distinguish the differences between different types of air filters and the benefits.
  4. Identify Building management systems.

B. General Education Learning Outcomes (GELOs)
  1. GELO #3: Critical Thinking & Problem Solving
  Outcome 5: Acquire and integrate knowledge and construct relationships across disciplines.

IV. CONTENT/TOPICAL OUTLINE

A. HVAC/Thermodynamic/Heat Transfer/Pneumatic Terms
B. Heat Transfer Fundamentals
C. Human Comfort Analysis
D. Calculations of Heat Gains & Heat Losses
E. Properties of Air & Psychrometric Charts
F. Air Mixture Calculations
G. Conditioned Air Supply Calculations
H. Refrigeration & Cooling Equipment

V. INSTRUCTIONAL MATERIALS

A. Required Text(s): Althouse, Turnquist, Bracciano, Bracciano, and Bracciano, *Modern Refrigeration and Air Conditioning*, 20th Edition

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
7. Speaker(s)
8. Field Trip(s)
9. Lab Projects

VII. METHODS OF EVALUATION

A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:

1. Tests
2. Quizzes
3. Lab Project

VIII. SPECIFIC COURSE REQUIREMENTS

A. Student must meet all of the following to receive a passing grade:

1. 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.
2. Demonstrate attitude, skills, and character commensurate with industry standards.
3. All program policies of the Heating, Ventilation, Air Conditioning, & Refrigeration Technology program will be strictly enforced.