Sinclair Community College
444 E. Third St.
Dayton, OH 45402

Master Syllabus

CAT 1601 - Building Electric & Controls

Division: Science, Mathematics and Engineering

Department: Construction Management Technology

Credit Hour Total: 4.0 **Lecture Hrs:** 2.0 **Lab Hrs:** 4.0

Prerequisite(s): HVA 1201AND HVA 1221

Date Revised: June 2017

Course Description:

An introduction to building electrical and control systems for HVAC technicians. Includes AC/DC circuits, single phase and three phase motors and motor control, HVAC equipment control, wiring techniques, control components including sequencers, and an introduction to building pneumatic and DDC control. Two classroom, four lab hours per week.

General Education Outcomes:

- Critical Thinking/Problem Solving Competency

Course Outcomes:

Basic AC/DC Circuit Operation
Apply Ohm's law, measure voltage, amperage, and capacitance

Assessment Method: Locally developed exams
Performance Criteria:

70% or better on exams.

HVAC Control Component Assessment
Identify various control components and be able to correctly test and wire

Assessment Method: Locally developed exams
Performance Criteria:

70% or better on exams.

Properly Wire Motors and Equipment Controls
Perform a load assessment, select and size wiring and control components

Assessment Method: Locally developed exams
Performance Criteria:

70% or better on exams.

Describe Basic Building Pneumatic and DDC Controls
Be able to connect and calibrate pneumatic and electronic devices

Assessment Method: Locally developed exams
Performance Criteria:

70% or better on exams.

Outline:

AC/DC Circuits

Electrical Safety

Ladder and Schematic Diagrams

Single Phase Motors

Three Phase Motors

ECM Motors

Motor Control and Wiring

HVAC Control Components

HVAC Equipment Control

HVAC Pneumatics

DDC Systems