

Course discipline/number/title: FST 2622: HVAC Control Systems Lab

A. CATALOG DESCRIPTION

1. Credits: 2
2. Hours/Week: 4
3. Prerequisites (Course discipline/number): FST 2518
4. Other requirements: None
5. MnTC Goals (if any): NA

B. COURSE DESCRIPTION: This course covers HVAC Control installation, wiring, and testing. Topics include commercial heating and cooling systems and commercial air handling units and the installation, testing and analyzing pneumatic control systems hybrid control systems and components. Installation, wiring, commissioning, and testing of building automation systems and controllers, inputs and outputs is addressed.

C. DATE LAST REVISED (Month, year): February, 2022

D. OUTLINE OF MAJOR CONTENT AREAS:

1. Explain the operation commercial heating, cooling and air distribution systems
2. Analyze and illustrate commercial heating and cooling and air distribution systems
3. Wire, install, commission and test building controls systems controllers and components
4. Analyzing, installing, and testing and calibrate pneumatic controls systems and components
5. Demonstrate knowledge in the installation of building automation systems, controllers, inputs and outputs
6. Demonstrate knowledge of wiring, and testing of building control systems, including hybrid control systems

E. LEARNING OUTCOMES (GENERAL): The student will be able to:

1. Analyze, illustrate and observe commercial heating and cooling systems.
2. Analyze, illustrate and observe commercial air handling units.
3. Analyze, install, test and calibrate pneumatic controls systems and components.
4. Wire, install, and test building controls systems controllers.
5. Wire, install, and test building controls systems inputs and outputs.
6. Wire, install, and test building controls systems actuators.
7. Wire, install, and test a hybrid control system.

F. LEARNING OUTCOMES (MNTC): NA

G. METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to:

1. Operational lab
2. Assignments
3. Lab projects

H. RCTC CORE OUTCOME(S). This course contributes to meeting the following RCTC Core Outcome(s):
Communication. Students will communicate appropriately for their respective audiences.

Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.

Personal and Professional Accountability. Students will take responsibility as active learners for achieving their educational and personal goals.

I. SPECIAL INFORMATION (if any): None