

Course discipline/number/title: FST 2632: HVAC Control Systems Theory

A. CATALOG DESCRIPTION

1. Credits: 3
2. Hours/Week: 3
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 principles, including commercial heating and cooling systems, air handling units, control principles, pneumatic control systems and components. The course topics also include building automation systems and controllers, inputs and outputs, installation, wiring, and testing including hybrid control systems.

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

D. OUTLINE OF MAJOR CONTENT AREAS:

1. Explain, function and operation of commercial heating and cooling systems
2. Explain, function and operation of commercial air handling units
3. Explain, function and operation and calibration of pneumatic control systems and its related components
4. Explain, function and operation of building automation systems, controllers, inputs and outputs
5. Explain, installation, wiring and testing of building automation systems
6. Explain, function and operation of commercial hybrid control systems

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

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, and commission and test building controls systems controllers and components.
4. Analyze, install, test 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.

F. LEARNING OUTCOMES (MNTC): NA

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

1. Exams
2. Operational lab
3. Quizzes

H. RCTC CORE OUTCOME(S). This course contributes to 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.

I. SPECIAL INFORMATION (if any): None