ROCHESTER COMMUNITY AND TECHNICAL COLLEGE COMMON COURSE OUTLINE

Course discipline/number/title: FST 2512: Commercial Refrigeration Theory

A. CATALOG DESCRIPTION
1. Credits: 3
2. Hours/Week: 3
3. Prerequisites (Course discipline/number): FST 1651
4. Other requirements: None
5. MnTC Goals (if any): NA

B. COURSE DESCRIPTION: This course covers fundamentals of Commercial and Special Refrigeration systems including normal and advanced component identification, diagnosing, and troubleshooting. These concepts will be applied in FST 2518.

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

D. OUTLINE OF MAJOR CONTENT AREAS:
1. Various compressors, condensers, expansion devices and evaporators in a refrigeration system.
2. Special refrigeration system components for enhanced operation.
3. Troubleshooting and system operations.
4. High and low pressure along with absorption refrigeration systems.

E. LEARNING OUTCOMES (GENERAL): The student will be able to:
1. Explain commercial and domestic refrigeration systems differences.
2. Compare different commercial applications.
3. Describe various condenser, evaporator, compressor, and metering device operation.
4. Describe difference between various air-cooled and water-cooled condensing units.
5. Describe difference between various natural and forced draft condensers and evaporators.
6. Describe liquid-cooling condensers and evaporators.
7. Explain the reason for various "accessory" components in a system.
8. Explain the proper pump-down procedures for a refrigeration system.
9. Differentiate ice-making mechanisms.
10. Describe defrosting/ice harvesting methods and controls.
11. Describe types of commercial refrigeration equipment.
12. Explain types of commercial refrigeration applications.
13. Differentiate commercial and industrial applications.
14. Differentiate absorption and compression (low and high pressure) refrigeration systems.
15. Describe types of absorption system.
16. Explain an absorption systems operation.
17. Explain evaporative condensers.
18. Describe various types of cooling towers.
19. Discuss special refrigeration systems.
20. Discuss the evacuation procedure in a commercial refrigeration system.
21. Describe recovery/recycling of refrigerant in a commercial refrigeration system.
22. Explain the recharging of a commercial refrigeration system.

F. LEARNING OUTCOMES (MNTC): NA

G. METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to:
1. Weekly assignments
2. Quizzes and Tests

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.

H. SPECIAL INFORMATION (if any): None