

Course discipline/number/title: FST 2506: Refrigeration Lab

A. CATALOG DESCRIPTION

1. Credits: 3
2. Hours/Week: 6
3. Prerequisites (Course discipline/number): FST 1651
4. Other requirements: None
5. MnTC Goals (if any): NA

B. COURSE DESCRIPTION: This course covers lab experiences working with safe lab practices, tools, tubing, refrigeration system components, refrigerants, refrigerant recovery, recycle, reclaiming, system evacuations, and proper testing equipment usage. The course builds on the basic knowledge of refrigeration systems.

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

D. OUTLINE OF MAJOR CONTENT AREAS:

1. Tubing and refrigerants.
2. Disassembly and assembly of a refrigeration system
3. Refrigeration systems and measurements

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

1. Demonstrate lab safety.
2. Cut and fit tubing.
3. Build a complete tubing assembly using flare, solder and brazing joints.
4. Test complete tubing assembly for leaks.
5. Demonstrate safety when handling tools, refrigerants, and supplies.
6. Use and understand a gauge manifold set.
7. Recover and recycle refrigerants.
8. Evacuate a refrigeration system.
9. Detect refrigeration leaks.
10. Repair refrigeration leaks using appropriate methods.
11. Operate and test a cap tube system.
12. Operate thermostatic expansion valve system.
13. Test thermostatic expansion valve system.
14. Disassemble and reassemble a small refrigeration system.
15. Test a refrigeration system for proper operation.
16. Perform temperature and pressure measurements.
17. Measure/calculate superheat and sub-cooling.

F. LEARNING OUTCOMES (MNTC): NA

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

1. Lab projects
2. Quizzes and Tests

H. RCTC CORE OUTCOME(S). This course contributes to the following RCTC Core Outcome(s):
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