

MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

Course Outline

Course Title: Introduction to HVAC
Semester Course Prefix and Number: IMT 2266
Old Quarter Course Prefix and Number:

Submitted By: Fleetwood
Approval Date:
Revision Date:

Number of Credits: 1
Semester(s) Offered:
Class Size:
Negotiated by AASC on: (date)
Number of Lecture Credits: 1
Number of Lab Credits: 0
Number of Studio/Demonstration/Internship Credits:

Course Purpose Code:

- 0 - Developmental Courses
1 - Non-transferable, General Education
X 2 - Technical course related to career programs
3 - College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)
4 - Other college course not considered a part of general education (MNTC) (e.g. computer science, health, physical education)
5 - Course which is intended to fulfill the Minnesota Transfer Curriculum (MNTC) requirements or intended for transfer.
9 - Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

Catalog Description:

This course covers an introduction to basic heating and refrigeration for the maintenance person.

Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s):
Reading Prerequisite:
Composition Prerequisite:
Mathematics Prerequisite:

Career Programs and Transfer Majors Accessing this Course:

Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable:

(Notes: No more than two goals may be met by any one course. Curriculum Committee review and the Chief Academic Officer's approval are required.)

- 0. X None
1. Communications
2. Critical Thinking
3. Natural Sciences
4. Mathematical/Logical Reasoning
5. History and the Social and Behavioral Sciences
6. The Humanities and Fine Arts
7. Human Diversity
8. Global Perspectives
9. Ethical and Civic Responsibility
10. People and the Environment

Learning Outcomes: (including any relevant competencies listed in the Minnesota Transfer Curriculum)

Upon completion of this course, the student will be able to:

- Exhibit professionalism
Understand and perform necessary math functions
Understand various systems such as: Gravity hot-air, forced warm-air, hot-water, hydronic, one-pipe, zone heating, electric heating, gas burner, oil burner, limit controls, and heat-actuate thermostats

- Explain refrigeration systems
- Identify safety problems in troubleshooting refrigeration system such as: reciprocating compressors, rotary compressors, helical compressors, flooded evaporator, dry-expansion evaporator, air-cooled condenser, water-cooled condenser, evaporative condenser, and metering devices
- Learning Objectives:
 - Describe differences between self-contained and central units.
 - Explain various aspects of temperature.
 - Distinguish between sensible heat and latent heat.
 - Contrast PSIG and PSIA.
 - Describe the two processes that continuously cycle to accomplish cooling
 - Identify the major components of a three-ton split residential system.
 - List the advantages and disadvantages of cap tubes and TXVs.
 - Trace the refrigerant flow throughout the system.
 - Describe the difference between volts and amperes.
 - Identify the three power terminals on any compressor.
 - Describe the basic types of tools required on a service call.
 - Explain mechanical, electrical and chemical safety precautions.
 - Identify reasons for compressors and condenser failure.
 - Understand how to perform three different methods of leak checking.

Student Assessment Methods:

Tests and hands-on performance

Use of Instructional Technology: (includes software, interactive video and other instructional technologies):

Videos and handouts

Additional Special Information: (special fees, directives on hazardous materials, etc.)

Transfer Information: (Please list colleges/majors that accept this course in transfer.)

Approvals:

Body	Representative Signatures	Date
Curriculum Committee		
Faculty Association		
Academic Affairs Standards Committee		
Chief Academic Officer		

Distribution: Original – Administrative Office

Copies: Curriculum Committee Chair, AASC Chair, Transfer Specialist, Originating Faculty Member, Scheduler, Records, Student Services, Learning Center, Library

Revised: June 2009