COMMON COURSE OUTLINE: Course discipline/number/title: BU 2500: Refrigeration Theory

A. CATALOG DESCRIPTION
   1. Credits: 3
   2. Hours/Week: 3
   3. Prerequisites (if any): None
   4. Co-requisites (if any): None
   5. MnTC Goals (if any): NA

   This course covers fundamentals of refrigeration, tools and materials, basic refrigeration systems, compression systems, refrigerant controls, refrigerants, domestic refrigerators and freezers, and principles of installing and servicing small hermetic systems. Recommended Entry Skills/Knowledge: High School Diploma or GED.

B. DATE LAST REVISED (use current date): April, 1997

C. OUTLINE OF MAJOR CONTENT AREAS:
   1. Refrigeration System
   2. Types of Compressor
   3. System Components

D. LEARNING OUTCOMES (GENERAL): The student will be able to:
   1. Describe Recovery & Recycle Reclaim.
   2. Differentiate sensible heat, specific heat, and latent heat.
   3. Define basic refrigeration terms.
   4. Describe refrigeration principles.
   5. Explain heat transfer principles.
   6. Describe refrigeration fittings and tubing.
   7. Describe soldering and brazing techniques.
   8. Explain refrigeration gauges.
   9. Describe refrigeration service valves.
  10. Describe evacuation process.
  11. Differentiate refrigeration systems.
  12. Describe refrigeration compression cycle.
  15. Differentiate refrigerant controls.
  17. Differentiate refrigeration compressor motors.
  18. Identify refrigeration and air conditioning circuits.
  19. List refrigerant properties.
  20. Identify refrigerant safety procedures.
  21. Draw a basic refrigeration diagram.
  22. Describe domestic refrigerator and freezer construction.
  23. Differentiate freezer and refrigerator types.
  24. Identify condensing unit and evaporator types.
  25. Differentiate servicing tools and instruments.
  26. Explain external service operations.
  27. Explain thermostat testing and servicing.
  29. Draw a solenoid valve.
  30. Identify internal compressor parts.
  31. Draw service valves.
  32. Explain refrigeration system components operation.
  33. Explain gauge maintenance and calibration.
  34. Differentiate PSIA and PSIG.
  35. Describe purging system.
  36. Describe leak repair with epoxy.
E. LEARNING OUTCOMES (MNTC): NA

F. METHODS FOR EVALUATION OF STUDENT LEARNING:
   1. Quizzes
   2. Tests

G. SPECIAL INFORMATION (if any): None