

Course Objectives/Course Outline
Spokane Community College

Course Title: Maintenance and Engineering

Prefix and Course Number: HM 141

Course Learning Outcomes:

By the end of this course, a student should be able to:

- explain the function of heating, air conditioning, and electrical systems
- read basic blueprints
- describe the function of engineers and maintenance personnel

Course Outline

I. Maintenance and Engineering Management

- A. Responsibilities of the Chief Engineer
- B. Organizational Structures
- C. Lodging Data and Cost
- D. Future Projections

II. Understanding Blueprints

- A. Uses of Blueprints
- B. Types of Blueprints
- C. Written Specifications
- D. Scaling

III. Basic Electrical Systems

- A. Principles of Electricity
- B. Electrical Appliances and Devices
- C. Methods of Lighting
- D. Electric Motors
- E. Emergency Lighting

IV. Basic Plumbing

- A. Water Distribution Systems
- B. System Maintenance
- C. Plumbing Fixtures and Drainage

V. Heating Principles

- A. Heating Systems
- B. Temperature and Heat
- C. Moisture Control
- D. Insulation
- E. Heat Types
- F. Sources of Heat

VI. Refrigeration Systems

- A. Types of Refrigeration Cycles
- B. Refrigerant Selection Factors
- C. Types of Refrigerants
- D. Refrigeration Units
- E. Air Measurement Properties
- F. Psychometric Chart

VII. Ventilation

- A. Ventilation Codes and Ordinances
- B. Ventilation Rates
- C. Ventilation Systems
- D. Kitchen Ventilation
- E. Air Filtration

VIII. Air Conditioning Systems

- A. Properties of Air Measurement
- B. Air Conditioning Installation
- C. The Psychometric Chart
- D. Preventive Maintenance Program

IX. Safety

- A. Working with Electricity
- B. Toxic Fumes
- C. Safe Storage

X. Recreational Facilities

- A. Swimming Pools
- B. Saunas