

COURSE INFORMATION

Course prefix/No.: BCT 223
Course Title: Residential Mechanical Systems
Lecture Hours/Week: 2
Lab Hours/Week: 3
Credit Hours/Semester: 3

[Distance Learning Attendance/VA Statement](#)
[Textbook Information](#)

COURSE DESCRIPTION

This course is a study of the workings of the basic HVAC, electrical, and plumbing systems found in residential structures.

COURSE COMPETENCIES

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

Module 1 – Principles of Energy and Effects on Building Structures

- Describe the different forms of energy
- Describe the methods of heat transfer
- Describe how temperature and humidity affect comfort
- Describe the fundamentals of a residential electrical circuit

Module 2 – Building Envelope

- Define the building envelope
- Test the building envelope and duct systems for leaks using blower door and duct blaster test equipment
- Discuss different thermal and air barriers
- Discuss the affects of doors and windows on the building envelope

Module 3 – Heating, Cooling, and Appliances

- Discuss different methods of heating a building
- Discuss the energy affects of lighting and appliances on a building
- Discuss different methods of cooling a building
- Discuss issues concerning ventilation

Module 4 – Water Heating, Health, and Safety

- Describe different methods of heating water
- Describe methods for improving hot water distribution
- Describe common air pollutants
- Describe methods of controlling moisture within the building

REQUIREMENTS

Attendance Policy

The college attendance policy stated in the college handbook will be honored.
The instructor will provide specific requirements for the course.

Academic Honesty

Students are expected to adhere to the college policy regarding student conduct as stated in the college handbook.

Assignments

Students are expected to complete all assignments and any supplementary exercises designated by the instructor.

EVALUATION STRATEGIES/GRADING

Students must complete all modules, including assignments, projects, labs, and tests. Students must earn at least a “C” in order for the course to serve as a prerequisite and for the course to apply towards a certificate.

Grading Scale

A = 90 - 100

B = 80 - 89

C = 70 - 79

D = 60 - 69

F = 0 - 59

Evaluation Method

Tests/Projects (minimum of four total)

12.50% for each module

Work Attitude

6.25% for each module

Lab

6.25% for each module

100% Final Grade = 25% X 4 modules

Work Attitude is defined as:

- Participation
- Responsibility
- Cooperation
- Professionalism
- Appearance
- Attendance
- Effort
- Self motivation
- Safety
- Works independently

ENTRY LEVEL SKILLS

The student must be able to read and solve basic mathematical equations.

PREREQUISITES: RDG 031 or equivalent and BCT 112

CO-REQUISITES: None

METHODS OF INSTRUCTION

Lectures, reading assignments, projects, discussions, video presentations, multimedia presentations, and web content are the major teaching methods used in this course. See instructor for specifics.

LAB EXERCISES

See addendum and/or instructor for additional details.