

## HVAC - Heating, Ventilation and Air-Conditioning

### HVAC B50 Principles of Air Conditioning

4 units

**Description:** This course is structured to introduce the student to the concepts of comfort and process air conditioning. The student will become knowledgeable in refrigeration systems applied to various types of air conditioning systems, basic electrical systems, sequence of operation, air distribution, humidity control, and the fundamentals of various types of heating systems. The students will learn from lecture and lab projects where they will be introduced to real world systems and components.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not Transferable. Degree Applicable

### HVAC B52 Electricity Applied to HVAC

4 units

**Description:** This course introduces students to, electron flow theory, magnetism, electrical generation, power distribution, conductors, insulators, fuses, motors, and motor controls applied to air conditioning and refrigerating systems. The students will learn read, draw, and interpret electrical schematics. This course also includes engagement in lab projects, and simulations where students will acquire basic diagnostics and troubleshooting techniques.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not Transferable. Degree Applicable

### HVAC B54 Refrigeration Technology

4 units

**Description:** This course introduces students to all aspects of refrigeration application and theory. Student will learn basic thermodynamics, and physics applied to the refrigeration cycle, the function of primary and auxiliary components, typical refrigeration temperatures and pressures, that is critical to the diagnostics of refrigeration systems. Students will learn safety procedures related to the safe handling of refrigerants. Students will also learn codes and standards related to the protection of the environment that is directly applicable to the E.P.A certification that must be acquired by all technicians.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not Transferable. Degree Applicable

### HVAC B55 Ice Machine Service and Repair

4 units

**Recommended:** Successful completion of HVAC B54 or equivalent with a grade of C or better.

**Description:** This course introduces students to the concepts of ice machine service and repair. Students will learn the proper methods of diagnosing common failures and deficiencies in ice machines, preventative maintenance, and proper methods of cleaning and sanitizing ice machines. The students will also learn the fundamental differences between the various makes of ice machines, and their sequence of operation.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not Transferable. Degree Applicable

### HVAC B60 Industrial Refrigeration Operations

4 units

**Recommended:** Successful completion of HVAC B54 with a grade of C or better.

**Description:** This course introduces students to the intricacies

of industrial refrigeration application and theory. Students will learn the properties and use of anhydrous ammonia as a refrigerant, physics applied to the refrigeration cycle, the function of primary and auxiliary components, and application of two stage compression systems. Students will learn safety procedures related to the safe operation and maintenance of industrial refrigeration systems. Students will also learn codes and standards, OSHA emergency response, Personal Protection Equipment, Ammonia Spills and Clean Up.

**Hours:** 54 lecture, 54 lab

**Transferable:** Not transferable. Degree applicable4