



Post-secondary certificate program designed to train people in the operation and maintenance of today's complex buildings. It is recommended that applicants be employed in a building operation. This program focuses on the knowledge required to understand the functioning of all systems in a commercial building including: heating, air conditioning, refrigeration, ventilation, electrical power, lighting, water and air supply. The program specifically focuses on how they are all interconnected, sustainability and how we can operate and maintain buildings more efficiently. All courses are graded.

**Introductory Overview**

**CIVL-1015 (39 hours)**

This course provides visual awareness of equipment in complex buildings with demonstrations of boilers, chillers, air handling units, fire protection and electrical equipment. BES 700.

**Air Conditioning**

**CIVL-1013 (39 hours)**

Learn to operate and maintain a variety of air conditioning and refrigeration equipment. Topics include: refrigeration cycle, terminology, auxiliary components, controls, lubrication and purging technique. BES 702.

**Air Handling**

**CIVL-1012 (39 hours)**

Covers air systems, fans, filters, coils, ductwork and air supply points. Also preventative maintenance programs, check points and forms to be used. BES 703.

**Controls**

**CIVL-1014 (39 hours)**

Learn the operation and application of automatic controls. Topics include control drawings, calibration, types of controllers, humidity control, pneumatic devices and electrical-electronic devices. BES 705.

**Electrical**

**CIVL-1016 (39 hours)**

this course covers the design, operation and maintenance of electrical systems in buildings in a safe, energy efficient, economical and environmentally responsible manner. BES 704.

**Energy Efficiency in Large Buildings**

**CIVL-1010 (39 hours)**

Learn to control utility costs and calculate payback of new cost cutting equipment. Also learn where to look for savings in heat loss, heat gain, air handling, lighting, maintenance and computerized switching systems. BES 710.

**Heating**

**ENVR-1006 (39 hours)**

This course provides visual awareness of equipment in complex buildings with demonstrations of boilers, chillers, air handling units, fire protection and electrical equipment. BES 700.

**Water Treatment**

**CIVL-1017 (39 hours)**

This course covers terminology, elementary water chemistry, hot water, chilled water,

steam, humidifiers, swimming pools and solar heating of water. BES 706.

**Air Systems Design**

**CIVL-1019 (39 hours)**

this course develops the student's abilities to work through design problems pertinent to both air volumes and water volumes required to satisfy a building's design criteria for both heating and cooling conditions. BES 708.

**Hospital Building Systems**

**CIVL-1041 (39 hours)**

This course covers building mechanical systems specific to hospitals and their effective maintenance. BES 709.

**Pipe Systems Design**

**CIVL-1042 (39 hours)**

this course is a study of the design application and operating characteristics of hydronic piping systems. It provides an understanding of communications with mechanical designers and contractors. BES 707.

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