

# **NITEC IN BUILT ENVIRONMENT (MECHANICAL & ELECTRICAL SERVICES)**

## **MODULE OBJECTIVES**

### **Core Modules**

#### **Electrical Services**

On completion of the module, students should be able to interpret electrical circuit diagrams, install conduits and trunkings, replace light fittings and accessories; rectify faults in electrical circuits; conduct insulation resistance and continuity tests.

#### **Mechanical Services**

On completion of the module, students should be able to carry out basic repairs on mechanical parts, service centrifugal pump, motor-drive assembly, air-cooled petrol and liquid-cooled diesel-driven portable generator, as well as replace faulty component of drive mechanism and door fittings.

#### **Residential Air-Conditioning Services**

On completion of the module, students should be able to install refrigeration piping system, install unitary and split-type air conditioners, replace faulty fan coil and condensing unit, and carry out preventive maintenance of a residential air-conditioning system, water cooler and dehumidifier.

#### **Piping and Plumbing Services**

On completion of the module, students should be able to repair water supply and sanitary piping system, replace piping fittings, sanitary fixtures, rectify faulty water heaters, clear pipe and drain chokes, and inspect water pump and control systems.

### **Specialisation Modules**

#### **Health, Safety and Environment**

On completion of the module, students should be able to comprehend HSE regulations and framework, identify environmental and safety hazards in workplace, implement appropriate risk controls, and apply safety requirements for working at height.

#### **Sustainable Air-Conditioning and Refrigeration Technology**

On completion of the module, students should be able to interpret ducting and piping layout drawings of an air-conditioning system, carry out balancing of airflow in an air distribution system, perform maintenance of chilled and condenser water piping system, air distribution system and air-conditioning equipment as well as functionality checks on Building Management System. Students will also learn the various sustainable air-conditioning and refrigeration technologies adopted in modern green buildings.

#### **Fire Detection and Protection Systems**

On completion of the module, students should be able to interpret building mechanical system plan, inspect fire alarm and detection system, service fire-fighting equipment such as hose reel system, riser system, private hydrant system and automated system, and perform inspection of emergency voice communication system, fire extinguishers and fire suppression system.

#### **Industry Attachment**

Students will be attached to relevant companies to reinforce the skills and knowledge acquired at ITE as well as gain professional and working experience.

### **Electives (Course Specific)**

#### **Energy Audit**

On completion of the module, students should be able to conduct on-site basic energy audit using the appropriate measuring instruments and tools; and recommend corrective measures for energy savings

### **Electives (Joint ITE-Industry)**

#### **Swimming Pool Maintenance**

On completion of the module, students should be able to carry out servicing, maintenance, repairs on swimming pool filtration system, and its equipment including carrying out water quality checks.

#### **Pest Management**

On completion of the module, students should be able to carry out pest inspection work, prepare work site for pest management, use pesticides and pest management equipment, prepares pesticides and supervise pest control operations performed by workers hired by the company. Upon completion of the course, students will be qualified to be licensed as technicians under the Control of Vectors and Pesticides Act 1998.