

## **NITEC IN BUILT ENVIRONMENT (VERTICAL TRANSPORTATION)**

### **MODULE OBJECTIVES**

#### **Core Modules**

##### **Electrical Services**

On completion of the module, students should be able to interpret electrical circuit diagrams, install lightings and power circuits with conduits and trunkings, replace lightings and accessories, rectify faults in lighting and power circuits, conduct insulation resistance and continuity tests and inspect lighting protection system.

##### **Mechanical Services**

On completion of the module, students should be able to interpret blueprint drawings, carry out bench-fitting work, fabricate and repair metal components, perform shielded metal arc welding up to horizontal welding position (2G), carry out preventive maintenance of machinery and engines, small diesel-driven generators and pumps.

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

On completion of the module, students should be able to fabricate refrigeration piping; perform leak testing, evacuation and charging of refrigeration system; routine maintenance, parts replacement, install and test residential air-conditioning units; perform preventive maintenance for water cooler and dehumidifier; troubleshoot, repair and service air-cooled air-conditioning equipment.

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

On completion of the module, students should be able to maintain, troubleshoot, service, repair and fabricate domestic and industrial piping system; replace plumbing and sanitary appliances, fittings, heaters (instant and storage type); and prepare piping layout and landscape irrigation drawings.

#### **Specialisation Modules**

##### **Lift and Escalator Systems and Equipment Maintenance**

On completion of the module, students should be able to identify and explain the operation, interpret lift drawings and, maintain, service and repair mechanical equipment and components of lift and escalator systems in accordance with lift engineering specifications and codes of practice.

##### **Lift and Escalator Power and Control Systems Maintenance**

On completion of the module, students should be able to maintain, service and repair lift controllers and electrical equipment, cables, components, safety switches of lift and escalator systems in accordance with lift engineering specifications and codes of practice.

##### **Lift Inspection and Commissioning**

On completion of the module, students should be able to inspect and evaluate the condition of a lift hoistway, oversee the correct installation of lift equipment and components and carry out heat run and commissioning tests on lift systems in accordance with lift engineering specifications and codes of practice.

##### **Lift Maintenance Management**

On completion of the module, students should be able to troubleshoot, adjust and carry out routine and periodic maintenance of lift systems and equipment and also identify and recommend upgrading and improvement works to clients.

### Industry Attachment

Students will undergo a 3-month On-the-Job Training (OJT) programme in lift and escalator industry to reinforce the skills and knowledge that they have learned in the institute at actual workplace via attachment and industry projects. A task list will be developed to guide the companies in providing relevant training to the students.

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

#### Cleanroom Technology

On completion of the module, students should be able to interpret and maintain the air-conditioning system in the cleanroom according to the specification. The training covers the skills and knowledge pertaining to particle counting, classification of cleanroom, maintaining air-conditioning system, filter replacing and interpreting the schematic drawing.

#### Energy Audit

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

#### Air-Conditioning and Building Management System

On completion of the module, students should be able to maintain and perform first line troubleshooting of packaged units, air-cooled and water-cooled centralized air-conditioning system.

#### Building Fire-Fighting and Protection Systems

On completion of the module, students should be able to service fire alarm and detection system, inspect one and two- ways emergency voice communication systems, automated sprinkler system, fire-fighting hydrants, hose reel system, fire suppression system and inspect portable types of fire extinguishers.

#### Floral Design

On completion of the module, students should be able to identify, select, design and arrange suitable flora and fauna schemes to meet different client requirements during different occasions.

### **Electives (Inter-disciplinary)**

#### Engineering Mathematics

On completion of the module, students should be able to solve engineering problems involving indices, logarithms, algebra, graphs, trigonometry, complex numbers and basic statistics.

### **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.