

# WORK-STUDY DIPLOMA IN VERTICAL TRANSPORTATION

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## **Modules Synopsis**

### **Module 1: Health, Safety & Workplace Orientation**

On completion of the module, trainees should be able to implement strategies and processes to ensure all works comply with requirements of the Workplace Safety and Health (WSH) Act, which would include environmental management, explosion protection, fire protection, chemical hazard management, material handling, Personal Protective Equipment (PPE), risk management and work at height.

### **Module 2 & 3: Lift Mechanical System I & II**

On completion of the modules, trainees should be able to interpret technical requirements and engineering drawings for lift maintenance, perform repair and diagnostic of mechanical system in lift, including traction machine, braking gears, buffers, cables, lift controller, counterweight, doors, door mechanisms, drive sheaves, guide rails, landing equipment, lift car, overspeed governor, roping system, safety/arresting gear and traction machine.

### **Module 4 & 5: Lift Electrical System I & II**

On completion of the modules, trainees should be able to interpret schematic drawing, perform repair and diagnostic of electrical system in lift, including motors, traction machine, electrical supply, power quality, electrical controls, safety gear, predictive failure for buffer, door safety devices, car door controller, emergency battery operated power supply, automatic rescue devices, transducers, overspeed governor and safety/arresting circuits.

### **Module 6: Lift & Escalator Installation**

On completion of the module, trainees should be able to interpret technical requirements and engineering drawings for new lift and escalator installation. They should also be able to supervise installation work according to contract requirements, and in compliance with relevant specifications, regulations and codes of practice.

### **Module 7: Supervisory Skills & Project Management**

On completion of the module, trainees should be able to interpret technical and maintenance requirements in contracts for lift and escalator, plan lift/escalator maintenance schedule according to contract requirements, and in compliance with relevant specifications, regulations and codes of practice. They should also be able to manage work schedule, project timelines and site crew including facilitate mandatory inspection by relevant government authorities.

### **Module 8: Lift Electronics & Controls**

On completion of the module, trainees should be able to maintain and troubleshoot electronics and control system in lift, including checking Printed Circuit Board (PCB) and electronics components, field bus and equipment - lift motor drives, micro-controller, display indicators, communication and intercom, fire/Building Management System (BMS) link interface and group control.

### **Module 9: Escalator Inspection & Testing**

On completion of the module, trainees should be able to interpret technical requirements and engineering drawings of escalator/moving walk system, and perform basic maintenance of its mechanical, electrical and electronic systems in compliance with relevant escalator/moving walk specifications, regulations and codes of practice. They should also be able to supervise inspection and testing of escalator/moving walk system, prepare records for commissioning and supervise annual load test according to regulatory requirements, and evaluate compliance with relevant specifications, regulations and codes of practice.

### **Module 10: Lift Inspection & Testing**

On completion of the module, trainees should be able to prepare documentation for lift inspection and testing, schedule and conduct interim inspection prior to testing. They should also be able to supervise inspection and testing of lift system, prepare records for commissioning and supervise annual load test according to regulatory requirements, and evaluate compliance with relevant specifications, regulations and codes of practice.

### **Module 11: Incident Investigation & Communication**

On completion of the module, trainees should be able to communicate, liaise and coordinate with client and external agency/authority in the event of a lift/escalator incident. They should also be able to investigate and identify cause(s), develop countermeasures and prepare lift/escalator incident report.

### **Module 12: Advanced Lift & Escalator Technologies**

On completion of the module, trainees should be able to plan, schedule and supervise preventive and corrective maintenance works according to contract requirements, and in compliance with relevant lift specifications, regulations and codes of practice as well as to conduct lift traffic analysis, identify problem in lift control and operation, and recommend solution to improve lift operation and traffic pattern to client. They should also be able to apply knowledge and skills in IT, virtual reality and augmented reality solution to improve productivity as well as to integrate knowledge of lift/escalator technology with operations, statutory regulations and technologies such as remote monitoring system, to diagnose and troubleshoot serious lift/escalator fault with the aid of event log, schematic diagram and specialised instrument.~

### **Module 13: Company Project**

On completion of the module, trainees should have applied their acquired competencies in an authentic project that would value-add to the company.

### **Module 14: On-the-Job Training**

On completion of the module, trainees should be able to apply the skills and knowledge acquired at ITE College and workplace to take on the full job scope, including supervisory function, where appropriate, at the company.