

WORK-STUDY DIPLOMA IN VERTICAL TRANSPORTATION

MODULE OBJECTIVES

Core Modules

Lift Safety and 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.

Lift Mechanical System

On completion of the module, trainees should be able to perform repair and diagnostic of mechanical system in lift, including motors, 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.

Escalator Technology

On completion of the module, trainees should be able to interpret technical requirements and engineering drawings of escalator system, and perform basic maintenance in compliance with relevant specifications, regulations and codes of practice.

Lift Electrical System

On completion of the module, trainees should be able to 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, door mechanisms, emergency battery operated power supply, automatic rescue devices, transducers, overspeed governor and safety/arresting circuits.

Lift and 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.

Lift and Escalator Maintenance

On completion of the module, trainees should be able to interpret technical requirements and engineering drawings for lift and escalator maintenance. They should also be able to plan, schedule and supervise preventive and corrective maintenance works according to contract requirements, and in compliance with relevant specifications, regulations and codes of practice.

Lift Electronics and Controls

On completion of the module, trainees should be able to troubleshoot electronics and controls in lift, including field bus and equipment - lift controller, display indicators, communication and intercom, fire/BMS link interface and group control.

Lift and Escalator Inspection and Testing

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

Incident Investigation and Technical 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 incident. They should also be able to investigate and identify cause(s), and prepare lift incident report.

Lift Traffic Pattern Analysis

On completion of the module, trainees should be able to conduct lift traffic analysis, identify problem in lift control and operation, and recommend solution to improve lift operation and traffic pattern to client.

Application of Smart Technology

On completion of the module, trainees should be able to acquire and apply knowledge and skills in IT, virtual reality and augmented reality solution to improve productivity.

Advanced Lift and Escalator Technologies

On completion of the module, trainees should be able to apply fundamental knowledge of lift and escalator technology and their operations, including major lift and escalator systems/components, as well as relevant statutory regulations. In addition, trainees should be able to diagnose, troubleshoot serious lift fault with the aid of event log, schematic diagram and specialised instrument

Supervisory Skills and Project Management

On completion of the module, trainees should be able to supervise and motivate technician team, plan maintenance schedule and roster, address and resolve workplace grievance that arise from time to time, and actively seek inputs relating to improvement of work processes. In addition, they should be able to identify training needs and plan for professional development of technician team.

On-the-Job Training I

On completion of Year 1 OJT, trainees should be able to apply relevant foundation skills and knowledge acquired in their first year of study to carry out basic lift and escalator installation and maintenance tasks.

On-the-Job Training II

On completion of Year 2 OJT, trainees should be able to apply relevant skills and knowledge acquired in their second year of study to carry out lift and escalator troubleshooting and inspection tasks.

On-the-Job Training III

On completion of Year 3 OJT, trainees should be able to apply relevant skills and knowledge acquired in their third year of study to carry out project scheduling and resource management for lift and escalator installation and maintenance works.

List for Skills for On-The-Job Training (Diploma in Vertical Transportation)

Proposed List of OJT Skills For Diploma In Vertical Transportation	
1	Implement safe work practices for lift installation and maintenance in accordance with WSH Act
2	Perform WSH inspection to ensure compliance with WSH Act
Supervise New Lift Installation Works	
1	Interpret contract specifications for lift installation
2	Interpret (new) lift engineering drawings
3	Perform coordination work in connection with lift installation work
4	Coordinate with relevant subcontractor for timely delivery of lift equipment and parts
5	Evaluate readiness of lift hoistway and shaft
6	Evaluate compliance of lift maintenance work to statutory requirements
7	Prepare documentation, drawings and manuals for new lift installation
Supervise Lift Maintenance Works	
1	Interpret contract specifications for lift maintenance
2	Interpret lift engineering drawings
3	Perform coordination work in connection with lift maintenance work
4	Coordinate with relevant subcontractor for timely delivery of lift equipment and parts
5	Evaluate compliance of lift maintenance work to statutory requirements
6	Prepare documentation, drawings and manuals for lift maintenance work

Perform Lift Inspection and Testing	
1	Perform coordination work in connection with lift inspection and testing
2	Supervise testing of lift system
3	Prepare documentation, drawings and manuals for lift inspection and testing
Perform Lift Incident Investigation	
1	Identify cause(s) of lift incident
2	Prepare lift incident report for follow up action
Perform Lift Improvements and Upgrades	
1	Identify lift components for replacement or upgrading
2	Conduct lift traffic analysis
3	Resolve lift traffic problems
Perform Lift Fault Diagnosis	
1	Perform troubleshooting of lift faults
2	Perform rectification of lift faults
Perform Supervision	
1	Plan lift installation, testing and maintenance schedule
2	Monitor progress of work
3	Prepare resources for site crew to carry out work
4	Lead site crew to meet work schedule
5	Facilitate mandatory inspection by relevant government authorities to meet statutory requirements
Apply IT and Technical Report Writing Skills	
1	Apply IT tools for project documentation
2	Prepare progress reports for client/owner
Implement New Lift Technologies and Equipment	
1	Implement new technologies and equipment into existing lifts
Perform Installation and Maintenance of Escalator System	
1	Perform installation and maintenance of escalator system
2	Evaluate compliance of escalator installation and maintenance works to statutory requirements
