

**List of Competencies for On-the-Job Training (OJT)  
Work-Study Diploma in Vertical Transportation**

<b>S/N</b>	<b>List of Competencies (Standard)</b>	<b>Company to indicate '✓' for OJT competencies it can provide</b>
1	Implement safe work procedures	
2	Perform workplace safety and health inspection	
3	Eliminate unsafe work practices	
4	Maintain machine room equipment	
5	Maintain landing equipment	
6	Maintain lift car equipment	
7	Maintain hoistway equipment	
8	Maintain lift pit equipment	
9	Maintain lift safety equipment	
10	Maintain traction machine	
11	Maintain lift controller	
12	Maintain emergency devices	
13	Maintain lift car systems	
14	Maintain hall & hoistway systems	
15	Maintain lift pit systems	
16	Coordinate lift/escalator installation works	
17	Evaluate readiness of lift hoistway	
18	Supervise lift/escalator equipment installation works	
19	Plan lift/escalator maintenance schedule	
20	Manage work schedule, project timelines and site crew	
21	Facilitate mandatory inspection by relevant government authorities	
22	Check motor drives and micro-controller application	
23	Check printed circuit board (PCB) and electronics components	
24	Troubleshoot electronics faults	
25	Maintain escalator/moving walk systems	
26	Supervise inspection and testing of escalator/moving walk systems	
27	Evaluate compliance of escalator/moving walk systems	
28	Prepare documentation for lift inspection and testing	

S/N	List of Competencies (Standard)	Company to indicate '✓' for OJT competencies it can provide
29	Supervise inspection and testing of lift system	
30	Evaluate compliance of lift system	
31	Coordinate with relevant parties on lift/escalator incident	
32	Evaluate cause(s) of lift/escalator incident	
33	Prepare lift/escalator incident report	
34	Conduct lift traffic analysis	
35	Apply advanced lift/escalator technologies	
36	Troubleshoot serious lift/escalator fault	
	<b>Sub-total of Competencies (Standard)</b>	
<b>List of Competencies (Company-specific)</b>		
1		
2		
3		
4		
5		
6		
7		
8		
9		
	<b>Sub-total of Competencies (Company-specific)</b>	

**Note:**

- a) Company must be able to provide OJT for at least **75%** of the List of Competencies (Standard).
- b) If company is unable to meet the 75%, please propose alternate **course-related** competencies which are unique to company operations. Alternate competencies are capped at 25%.  
[i.e. 50% of the list of competencies (standard) + 25% alternate competencies (Company-specific)].
- c) All alternate competencies (Company-specific) must be reviewed and endorsed by ITE.
- d) Trainees must receive OJT and be assessed for **All** competencies selected in this List.

Total no. of competencies selected by company for OJT

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Total no. of competencies listed (*standard & company specific*)

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Percentage of selected competencies

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**Completed By:**

\_\_\_\_\_  
**Name**

\_\_\_\_\_  
**Company**

\_\_\_\_\_  
**Designation**

\_\_\_\_\_  
**Date**

For ITE's Completion			
<b>Reviewed by CED / College</b> <i>(For Company-specific Competencies)</i>		<b>Verified by IBT Officer</b>	
Name:			Name & Date:
Designation:		Date:	

Version: June'23

# WORK-STUDY DIPLOMA IN VERTICAL TRANSPORTATION

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## 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.

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Semester	Semester 1																										Semester 2																									
	2 Weeks		8 Weeks				4 Weeks				8 Weeks				2 Weeks		2 Weeks		10 Weeks										4 Weeks				8 Weeks				2 Weeks		2 Weeks													
Year 1	Full time in ITE		1 day per week OffJT in ITE and 4 days per week OJT at Company				OJT at Company				1 day per week OffJT in ITE and 4 days per week OJT at Company				OJT at Company		OJT at Company		1 day per week OffJT in ITE and 4 days per week OJT at Company										OJT at Company				1 day per week OffJT in ITE and 4 days per week OJT at Company				OJT at Company		OJT at Company													
Semester	Semester 3																										Semester 4																									
	10 Weeks										4 Weeks				8 Weeks				2 Weeks		2 Weeks		10 Weeks										4 Weeks				8 Weeks				2 Weeks		2 Weeks									
Year 2	1 day per week OffJT in ITE and 4 days per week OJT at Company										OJT at Company				1 day per week OffJT in ITE and 4 days per week OJT at Company				OJT at Company		OJT at Company		1 day per week OffJT in ITE and 4 days per week OJT at Company										OJT at Company				1 day per week OffJT in ITE and 4 days per week OJT at Company				OJT at Company		OJT at Company									
Semester	Semester 5																																																			
	10 Weeks										4 Weeks				8 Weeks				2 Weeks		2 Weeks																															
Year 3	1 day per week OffJT in ITE and 4 days per week OJT at Company										OJT at Company				1 day per week OffJT in ITE and 4 days per week OJT at Company				OJT at Company		OJT at Company																															

Total required Off OJT hrs = 900 hrs  
Total required OJT hrs = 3100 hrs  
Grand Total Training hrs = 900 hrs + 3100 hrs = 4000 hrs

- Full-time training in ITE
- One day per week - day-release in ITE
- On-the-Job training in company
- Examination week

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Year 1 (Apr 2025 - Mar 2026)	7 Apr - 11 Apr	14 Apr - 18 Apr	21 Apr - 25 Apr	28 Apr - 2 May	5 May - 9 May	12 May - 16 May	19 May - 23 May	26 May - 30 May	2 Jun - 6 Jun	9 Jun - 13 Jun	16 Jun - 20 Jun	23 Jun - 27 Jun	30 Jun - 4 Jul	7 Jul - 11 Jul	14 Jul - 18 Jul	21 Jul - 25 Jul	28 Jul - 1 Aug	4 Aug - 8 Aug	11 Aug - 15 Aug	18 Aug - 22 Aug	25 Aug - 29 Aug	1 Sep - 5 Sep	8 Sep - 12 Sep	15 Sep - 19 Sep	22 Sep - 26 Sep	29 Sep - 3 Oct	6 Oct - 10 Oct	13 Oct - 17 Oct	20 Oct - 24 Oct	27 Oct - 31 Oct	3 Nov - 7 Nov	10 Nov - 14 Nov	17 Nov - 21 Nov	24 Nov - 28 Nov	1 Dec - 5 Dec	8 Dec - 12 Dec	15 Dec - 19 Dec	22 Dec - 26 Dec	29 Dec - 2 Jan	5 Jan - 9 Jan	12 Jan - 16 Jan	19 Jan - 23 Jan	26 Jan - 30 Jan	2 Feb - 6 Feb	9 Feb - 13 Feb	16 Feb - 20 Feb	23 Feb - 27 Feb	2 Mar - 6 Mar	9 Mar - 13 Mar	16 Mar - 20 Mar	23 Mar - 27 Mar	
Semester	Semester 1																										Semester 2																									
Year 2 (Apr 2026 - Mar 2027)	6 Apr - 10 Apr	13 Apr - 17 Apr	01 Apr - 24 Apr	27 Apr - 1 May	4 May - 8 May	11 May - 15 May	18 May - 22 May	25 May - 29 May	1 Jun - 5 Jun	8 Jun - 12 Jun	15 Jun - 19 Jun	22 Jun - 26 Jun	29 Jun - 3 Jul	6 Jul - 10 Jul	13 Jul - 17 Jul	20 Jul - 24 Jul	3 Aug - 7 Aug	10 Aug - 14 Aug	17 Aug - 21 Aug	24 Aug - 28 Aug	31 Aug - 4 Sep	7 Sep - 11 Sep	14 Sep - 18 Sep	21 Sep - 25 Sep	28 Sep - 2 Oct	5 Oct - 9 Oct	12 Oct - 16 Oct	19 Oct - 23 Oct	26 Oct - 30 Oct	2 Nov - 6 Nov	9 Nov - 13 Nov	16 Nov - 20 Nov	23 Nov - 27 Nov	30 Nov - 4 Dec	7 Dec - 11 Dec	14 Dec - 18 Dec	21 Dec - 25 Dec	28 Dec - 1 Jan	4 Jan - 8 Jan	11 Jan - 15 Jan	18 Jan - 22 Jan	25 Jan - 29 Jan	1 Feb - 5 Feb	8 Feb - 12 Feb	15 Feb - 19 Feb	22 Feb - 26 Feb	29 Mar - 2 Apr					
Semester	Semester 3																										Semester 4																									
Year 3 (Apr 2027 - Oct 2027)	5 Apr - 9 Apr	12 Apr - 16 Apr	19 Apr - 23 Apr	26 Apr - 30 Apr	3 May - 7 May	10 May - 14 May	17 May - 21 May	24 May - 28 May	31 May - 4 Jun	7 Jun - 11 Jun	14 Jun - 18 Jun	21 Jun - 25 Jun	28 Jun - 2 Jul	5 Jul - 9 Jul	12 Jul - 16 Jul	19 Jul - 23 Jul	26 Jul - 30 Jul	2 Aug - 6 Aug	9 Aug - 13 Aug	16 Aug - 20 Aug	23 Aug - 27 Aug	30 Aug - 3 Sep	6 Sep - 10 Sep	13 Sep - 17 Sep	20 Sep - 24 Sep	27 Sep - 1 Oct																										
Semester	Semester 5																																																			