List of Competencies for On-the-Job Training (OJT)
Work-Study Diploma in Port Automation Technology

Note: LOC is subject to changes due to curriculum review/ development

S/N	List of Competencies (Standard)	Company to indicate '✓' for OJT competencies it can provide
1	Perform system checks on Quay Crane	☐
2	Perform system checks on Yard Crane	☐
3	Perform system check on Electric Vehicle	☐
4	Configure PLC system	☐
5	Program PLC for automation tack	☐
6	Program industrial robot for handling applications	☐
7	Manage continuous improvement activities via design thinking	☐
8	Manage Workshop Safety and Health (WSH)	☐
9	Supervise maintenance team and contractors	☐
10	Monitor Port Equipment performance data	☐
11	Analyse Port Equipment Maintenance Data	☐
12	Develop Predictive Maintenance Program	☐
13	Install video imaging detection sensor	☐
14	Install proximity detection sensor	☐
15	Install ultrasonic sensor	☐
16	Install navigation system sensors	☐
17	Set up wired local area network	☐
18	Set up wireless local area network	☐
19	Set up Internet-of-Things (IoT) communication	☐
20	Manage user access	☐
21	Maintain system backup and redundancy	☐
22	Perform server and system hardening	☐
23	Install AC induction motor and control system	☐
24	Install AC synchronous motor and control system	☐
25	Install servo motor and control system	☐
26	Install DC motor and control system	☐
	Sub – total of Competencies (Standard)	0

S/N	List of Competencies (Standard)	Company to indicate '✓' for OJT competencies it can provide
List of Competencies (Company-specific)		
1		
2		
3		
4		
5		
6		
	Sub-total of Competencies (Company-specific)	0

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	0
Total no. of competencies listed *(standard & company specific)*	26
Percentage of selected competencies	0%

Completed By:

_____ _____

Name **Company**

MODULE SYNOPSIS – WSDip in Port Automation Technology

Course Objective

The course equips trainees with the skills and knowledge to perform and supervise maintenance and repair of various port container handling automated systems and equipment, such as network system, automated crane and vehicle, in accordance with planned schedule, quality standards, Standard Operating Procedures (SOPs) and Workplace Safety and Health (WSH) guidelines.

Modules Synopsis

Port Automation
On completion of the module, trainees should be able to perform system check on port automation equipment such as gantry crane, quay crane and automated guided vehicle. They should also be able to assess working fundamentals of automated equipment, including communication and controls.
Industrial Automation
On completion of the module, trainees should able to perform system check on an Automated Storage and Retrieval System (ASRS) including sub components such as conveyor, Human Machine Interface (HMI), Programmable Logic Controller (PLC) and robotics system in an industrial automation environment. They should also be able to interface, program and troubleshoot PLC-controlled applications, intelligent modules (using advanced PLC instructions) and robotics system.
Quality Management
On completion of the module, trainees should be able to manage continuous improvement activities, and implement engineering and safety management. They should also be able to supervise work performed by maintenance team and contractor, to ensure implementation of safety workflow and worker adoption of safety measures.
Data Analytics for Predictive Maintenance
On completion of the module, trainees should be able to monitor and analyse crane maintenance data, and develop a predictive maintenance program.
Sensor & Device Technology
On completion of the module, trainees should be able to install and troubleshoot various detection sensors, including video imaging, Lidar, ultrasonic as well as inertial measurement unit.
Network System
On completion of the module, trainees should be able to plan installation of network system, configure wired and wireless local area networks, wide area network and IoT communication, as well as troubleshoot network connectivity issue.
System Security

MODULE SYNOPSIS – WSDip in Port Automation Technology

On completion of the module, trainees should be able to install and configure Windows and Linux operating systems on end-user computing device. They should be able to set up end-user device security as well as perform system hardening, maintenance and troubleshooting.

Electrical Motors & Control System

On completion of the module, trainees should be able to troubleshoot AC synchronous motor, induction motor and servo-drive. They should also be able to test open-loop control of AC motor and perform Proportional-Integral-Derivative (PID) tuning.

Company Project

On completion of the module, trainees should be able to apply skills and knowledge acquired to carry out a project relating to automated port operation/environment. They would need to document and prepare a project report, and conduct an oral presentation of the completed project.

TRAINING PATTERN SCHEDULE

WSDip in Port Automation Technology

Day Release - Trainees attend 1 to 2 days of lessons per week at ITE, with the remaining work-week spent at the workplace for On-the-Job Training.

April'26 Intake	April – June 2026	ITE Vacation (June) 4 weeks	July – September 2026	ITE Vacation (Sept) 2 weeks	October – December 2026	ITE Vacation (Dec) 4 weeks	January – March 2027	ITE Vacation (March) 2 weeks
1st Year Off-JT @ ITE	**2 days/week**		**2 days/week**		**2 days/week**		**2 days/week**	

April'26 Intake	April – June 2027	ITE Vacation (June) 4 weeks	July – September 2027	ITE Vacation (Sept) 2 weeks	October – December 2027	ITE Vacation (Dec) 4 weeks	January – March 2028	ITE Vacation (March) 2 weeks
2nd Year Off-JT @ ITE	**2 days/week**		**2 days/week**		**1 day/week**		**1 day/week**	

April'26 Intake	April – June 2028	ITE Vacation (June) 4 weeks	July – September 2028	ITE Vacation (Sept) 2 weeks	
3rd Year Off-JT @ ITE	**1 day/week**		**1 day/week**		**WSDip Programme 2026** **Start: 1 April 2026** **End: 30 September 2028** **Duration: 2.5 years** ⚠ **Final results release may be later than programme end date**