

List of Competencies for On-the-Job Training (OJT)
Work-Study Diploma in Electronics & Computer Engineering (IoT & Data Engineering)

S/N	List of Competencies (Standard)	Company to indicate '✓' for OJT competencies it can provide
	Common	
	Manage equipment maintenance and product operations	
1.	Monitor equipment operations and performance	☐
2.	Test electronic circuit for product operation	☐
3.	Manage equipment and product failures	☐
	Manage IoT network and connectivity	
4.	Deploy network infrastructure	☐
5.	Deploy IoT infrastructure	☐
6.	Monitor IoT data transmission	☐
	Perform data analysis and visualisation	
7.	Perform data processing	☐
8.	Perform data visualisation	☐
9.	Perform data analysis	☐
	B) Specialisation – IoT & Data Engineering	
	Manage IoT system integration	
10.	Design integrated system	☐
11.	Stimulate IoT system design	☐
12.	Optimise system performance	☐
	Implement IoT cloud services	
13.	Propose cloud services	☐
14.	Configure cloud services	☐
15.	Monitor cloud services	☐
	Manage IoT solutions	
16.	Deploy IoT solutions	☐
17.	Implement remote monitoring	☐
18.	Maintain IoT security and solutions	☐
	Implement alert system	
19.	Evaluate alert system	☐

S/N	List of Competencies (Standard)	Company to indicate '✓' for OJT competencies it can provide
20.	Maintain alert system	☐
21.	Deploy alert system	☐
	Manage system integration	
22.	Design integrated system	☐
23.	Implement integrated system	☐
24.	Maintain system performance	☐
	Sub – total of Competencies (Standard)	0
List of Competencies (Company-specific)		
1		
2		
3		
4		
5		
6		
	Sub-total of Competencies (Company-specific)	0

Note:

- Company must be able to provide OJT for at least **75%** of the List of Competencies (Standard).
- 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)].
- All alternate competencies (Company-specific) must be reviewed and endorsed by ITE.
- 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*)

24

Percentage of selected competencies

0%

Completed By:

Name

Company

MODULE SYNOPSIS – WSDip in Electronics & Computer Engineering

(IoT & Data Engineering)

Course Objective

The course equips trainees with the skills, knowledge and professional attributes to design, deploy and manage AI-enabled and IoT-based systems with digital connectivity, to optimise operational efficiency and reliability in a digitalised work environment. This specialisation equips trainees with the skills, knowledge and professional attributes to design, integrate and manage IoT-based data analysis and engineering to optimise operational efficiency and reliability in Advanced Manufacturing, Smart Nation, Logistics, Smart Building and Digital Supply Chain related business applications.

Modules Synopsis

Electronics & Electrical Principles

On completion of the module, trainees should be able to manage operations and performance for equipment and products. They should also be able to manage equipment and product failures by implementing Electrostatic Discharge (ESD) Control measures and evaluating performance metrics.

IoT Devices & Networking

On completion of the module, trainees should be able to manage IoT network and connectivity by programming and deploying IoT devices, configuring IoT network connectivity and monitoring IoT data transmission for quality IoT data communication.

Data Analysis & Visualisation

On completion of the module, trainees should be able to extract and transform data into useful information, as well as create visual elements, to aid in business decision-making. They should also be able to manage projects through collaboration and teamwork.

IoT System Design & Programming

On completion of the module, trainees should be able to manage IoT system design by designing IoT integrated system, programming IoT system, simulating system design and optimising system performance through collected data.

Cloud Computing

On completion of the module, trainees should be able to propose, configure and monitor cloud services. They should also be able to set up and configure virtual infrastructure, as well as perform backup and recovery.

Applied Electronics

On completion of the module, trainees should be able to manage system integration by designing and implementing integrated system, as well as maintaining system performance.

IoT Connectivity & Integration

On completion of the module, trainees should be able to deploy and manage IoT solutions, as well as implement remote monitoring, and maintaining IoT security.

MODULE SYNOPSIS – WSDip in Electronics & Computer Engineering

(IoT & Data Engineering)

IoT System & Business Applications

On completion of the module, trainees should be able to deploy and integrate IoT applications to existing factory system, record and transfer data to monitor important processes, in order to provide new insights, boost efficiency and productivity, and allow companies to make more informed decisions based on data collected and business applications.

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.

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.