List of Competencies for On-the-Job Training (OJT)
Work-Study Diploma in AI & Data Intelligence (Data Engineering Specialisation)

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
Develop program codes		
1	Create program logic	
2	Write program codes	
3	Debug program	
Manage compliance to governance processes		
4	Analyse relevant data and AI governance principles	
5	Implement data guidelines and AI ethics principles	
6	Manage non-compliance incidents	
Perform data analysis and visualisation		
7	Perform data processing	
8	Perform data visualisation	
9	Perform data analysis	
Perform data preparation		
10	Inspect data quality	
11	Perform feature extraction	
12	Prepare Train-Test-Validate subsets	
Manage dataset		
13	Perform data collection	
14	Process collected data	
15	Validate processed data	
Manage database systems		
16	Analyse data requirements	
17	Design database models	
18	Optimise data migration	
Manage end-to-end data pipelines		
19	Design data consumption process	
20	Build data pipeline	
21	Monitor data pipeline	

S/N	List of Competencies (Standard)	Company to indicate '✓' for OJT competencies it can provide
Develop data solutions		
22	Design data solution	
23	Develop prototypes for data solution	
24	Optimise solution performance	
	Sub-total of Competencies (Standard)	
List of Competencies (Company-specific)		
1		
2		
3		
4		
5		
6		
	Sub-total of Competencies (Company-specific)	

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

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

Percentage of selected competencies

Completed By:

_____   _____
Name   **Company**

MODULE SYNOPSIS – WSDip in AI & Data Intelligence (Data Engineering)

Course Objective

This course equips trainees with the skills, knowledge and professional attributes to deploy, integrate and support AI capabilities and data technologies, to drive business benefits through digital strategies. This specialisation equips trainees with the skills, knowledge and professional attributes to develop, implement and maintain data flow channels and data processing systems, to derive insights for business needs.

Modules Synopsis

Programming for Data & AI
On completion of the module, trainees should be able to develop program codes by creating program logic, writing program codes and debugging program.
AI Governance
On completion of the module, trainees should be able to manage compliance to data and AI governance processes, as well as mitigate non-compliance incidents.
Advanced Data Insights
On completion of the module, trainees should be able to perform data processing, analysis and visualisation using data analytics tools.
Data Preparation & Feature Engineering
On completion of the module, trainees should be able to inspect data quality and perform feature extraction, as well as prepare train-test-validate subsets for model building.
Data Management & Analysis
On completion of the module, trainees should be able to manage dataset by collecting, processing and validating data to discover patterns and insights.
Database Essential
On completion of the module, trainees should be able to manage database systems by designing database models and optimising data migration.
Data Pipeline Management
On completion of the module, trainees should be able to manage end-to-end data pipelines by designing data consumption process, as well as building and monitoring data pipeline.
Data Solution Design & Development
On completion of the module, trainees should be able to address a problem statement through data solution development. They should also be able to design data solution, develop prototypes and optimise solution performance.
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.

TRAINING PATTERN SCHEDULE

WSDip in AI & Data Intelligence (Data Engineering)

Block Release - Trainees attend daily lessons at ITE for a continuous period and then resume the next block of OJT at the workplace.

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				
April'26 Intake	**April – June 2026**	**July – September 2026**	**October – December 2026**	**January – March 2027**
1st Year Off-JT @ ITE	**6 Weeks Block (Apr – May) Remaining weeks - OJT**	**100% OJT**	**8 Weeks Block (Oct – Dec) Remaining weeks - OJT**	**100% OJT**
April'26 Intake	**April – June 2027**	**July – September 2027**	**October – December 2027**	**January – March 2028**
2nd Year Off-JT @ ITE	**100% OJT**	**8 Weeks Block (Jul – Sep) Remaining weeks - OJT**	**100% OJT**	**8 Weeks Block (Jan – Mar) Remaining weeks - OJT**
April'26 Intake	**April – June 2028**	**July – September 2028**		
3rd Year Off-JT @ ITE	**100% OJT**	**10 Weeks Block (Jul – Sep)**		