# List of Competencies for On-the-Job Training (OJT)
# Work-Study Diploma in Land Transport Engineering (Rail)

Applicants applying for this course must be free from colour appreciation deficiency. A score of 100% from the Colour Blindness Test is mandatory for course admission.

| S/N | List of Competencies (Standard) | Company to indicate '✓' for OJT competencies it can provide |
|---|---|---|
| 1 | Conduct toolbox meeting | |
| 2 | Conduct workplace safety and health (WSH) checks | |
| 3 | Conduct diagnostic consultations | |
| 4 | Write technical report | |
| 5 | Liaise with OEM on technical matters | |
| 6 | Analyse material failure | |
| 7 | Perform non-destructive testing | |
| 8 | Produce 3D components | |
| 9 | Troubleshoot electrical circuits | |
| 10 | Inspect electrical circuits | |
| 11 | Inspect electrical components serviceability | |
| 12 | Install sensors and actuators | |
| 13 | Inspect sensors and actuators serviceability | |
| 14 | Troubleshoot sensor and actuator circuits | |
| 15 | Install motor and control system | |
| 16 | Troubleshoot motor control system | |
| 17 | Inspect motor serviceability | |
| 18 | Plan workshops operations | |
| 19 | Prepare maintenance schedule | |
| 20 | Prepare operational budget | |
| 21 | Establish maintenance and data requirements | |
| 22 | Perform data analysis | |
| 23 | Propose work improvements | |
| **Select one of the following groups:** | | |
| | **\*Option 1: Rolling Stock System** | |
| 24A | Install rolling stock equipment | |
| 25A | Perform maintenance works on rolling stock equipment and system | |
| 26A | Diagnose faults in rolling stock equipment and system | |

| S/N | List of Competencies (Standard) | Company to indicate '✓' for OJT competencies it can provide |
|---|---|---|
| | **\*Option 2: Signalling Systems** | |
| 24B | Install rapid transit signalling systems | |
| 25B | Perform maintenance works on rapid transit signalling system | |
| 26B | Diagnose rapid transit signalling systems faults | |
| | **\*Option 3: Track Electrification System** | |
| 24C | Install track electrification system | |
| 25C | Carry out works on track electrification system | |
| 26C | Diagnose faults on track electrification system | |
| | **\*Option 4: Permanent Way System** | |
| 24D | Inspect permanent way parts and tracks systems | |
| 25D | Install permanent way components | |
| 26D | Diagnose permanent way equipment faults | |
| **List of Competencies (Company-specific)** | | |
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| | **Sub-total of Competencies (Company-specific)** | |

*\* Company may select either Option 1, Option 2, Option 3 or Option 4.*

**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.

| | Option 1 | | | Option 2 | | | Option 3 | | | Option 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Standard | Company-Specific | Total | Standard | Company-Specific | Total | Standard | Company-Specific | Total | Standard | Company-Specific | Total |
| 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 Land Transport Engineering (Rail Specialization)

## Course Objective
This course prepares trainees for a professional career in the Land Transport Industry. You will be equipped with skills, knowledge and professional attributes to inspect, troubleshoot, maintain and repair of Rail systems and associated sub-systems and components using appropriate methods and procedures. You will also learn to ensure safe and efficient operations of the equipment and systems.

## Modules Synopsis

| Workplace Safety & Health |
|---|
| On completion of the module, trainees should be able to implement relevant workplace safety and health regulations and carry out risk assessment and inspection. |

| Technical Communication |
|---|
| On completion of the module, trainees should be able to effectively communicate and document technical specifications and requirements with stakeholders (both internal and external) in both verbal and written forms. |

| Engineering Materials |
|---|
| On completion of the module, trainees should be able to perform various non- destructive testing (NDT) methods to detect defects and carry out analysis on the NDT results. |

| DC & AC Circuits |
|---|
| On completion of the module, trainees should be able to analyse, connect and troubleshoot DC and AC circuits. |

| Sensors & Actuators |
|---|
| On completion of the module, trainees should be able to install and inspect sensors and actuators, as well as perform circuit troubleshooting. |

| Electrical Machines |
|---|
| On completion of the module, trainees should be able to install and maintain electrical motors and drive systems. |

| Workshop Operations |
|---|
| On completion of the module, trainees should be able to plan corrective, preventive and predictive maintenance activities that ensure equipment and systems are fully functional and in optimal operating condition. |

| Data Analytics for Predictive Maintenance |
|---|
| On completion of the module, trainees should be able to perform data cleaning, transformation and analysis for predictive maintenance. |

# MODULE SYNOPSIS – WSDip in Land Transport Engineering (Rail Specialization)

## Rolling Stock Systems

On completion of the module, trainees should be able to perform the maintenance and inspection of train air-conditioning, ventilation, brakes, bogie and cabin equipment and door control systems.

## Railway Signalling

On completion of the module, trainees should be able to perform the maintenance and inspection of rapid transit signalling devices, circuits and systems in accordance with railway industry standards and regulations.

## Track Electrification

On completion of the module, trainees should be able to perform the maintenance and inspection of third rail and current collection systems for trains.

## Permanent Way System

On completion of the module, trainees should be able to perform the maintenance and inspection of permanent way parts and tracks systems for rapid transit network.

## 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.

# TRAINING PATTERN SCHEDULE

**WSDip in Land Transport Engineering (Rail Specialization)**

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

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

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