

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

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	Install electrical circuits	
2	Troubleshoot electrical faults	
3	Install sensors and actuators	
4	Install programmable logic controller	
5	Perform electrical design	
6	Perform electrical installation	
7	Maintain electrical installation	
8	Produce electrical layout	
9	Produce single-line diagram	
10	Inspect electrical quantities	
11	Manage electrical loading	
12	Maintain power electronics	
13	Maintain energy storage system	
14	Design motor and control system	
15	Install motor and control system	
16	Maintain motor and control system	
17	Design electrical distribution system	
18	Install electrical distribution system	
19	Maintain electrical distribution system	
20	Analyze power distribution	
21	Manage power quality	
22	Design solar photovoltaic system	
23	Install solar photovoltaic system	
24	Maintain solar photovoltaic system	
25	Maintain electric vehicle charger	
	Sub-total of Competencies (Standard)	
List of Competencies (Company-specific)		
1		

S/N	List of Competencies (Standard)	Company to indicate '✓' for OJT competencies it can provide
2		
3		
4		
5		
6		
7		
	Sub-total of Competencies (Company-specific)	

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

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

WORK-STUDY DIPLOMA IN ELECTRICAL ENGINEERING

Course Objective

This course equips trainees with the skills, knowledge and professional attributes to design, install, maintain, repair, inspect, test, operate and supervise electrical installations and systems in accordance with engineering specifications as well as codes of practice and regulations.

Module Synopsis

Module 1: Electrotechnology

On completion of the module, trainees should be able to analyse, connect, test and troubleshoot DC, AC and electromagnetic circuits.

Module 2: Industrial Control Automation

On completion of the module, trainees should be able to design and install programmable logic control system.

Module 3: Electrical Design & Installation

On completion of the module, trainees should be able to design, install, test and maintain electrical installations in compliance with the relevant codes of practice and statutory regulations.

Module 4: Electrical Drafting

On completion of the module, trainees should be able to produce electrical layout drawing and single-line diagram.

Module 5: Circuit Analysis

On completion of the module, trainees should be able to determine electrical quantities as well as apply concepts and theorems in circuit analysis for three-phase systems and manage electrical loading.

Module 6: Power Electronics

On completion of the module, trainees should be able to maintain power electronics and energy storage systems.

Module 7: Electrical Motor & Control System

On completion of the module, trainees should be able to design, install and maintain electrical motor and control systems.

Module 8: Power Distribution System

On completion of the module, trainees should be able to design, install and maintain major electrical equipment and its associated protective devices in the power distribution system, in compliance with the relevant codes of practices and statutory regulations.

Module 9: Power System Analysis

On completion of the module, trainees should be able to analyse power distribution and mitigate power quality issues.

Module 10: Solar Photovoltaic System & Electric Vehicle Charger

On completion of the module, trainees should be able to design, install and maintain solar

photovoltaic system as well as maintain electric vehicle charging infrastructures.

Module 11: 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.

Module 12: 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.

Off-the-Job Modules List

1st Year Modules

1. Electrotechnology
2. Industrial Control Automation
3. Electrical Design & Installation
4. Electrical Drafting

2nd Year Modules

5. Circuit Analysis
6. Power Electronics
7. Electrical Motor & Control System
8. Power Distribution System

3rd Year Modules

9. Power System Analysis
10. Solar Photovoltaic System & Electric Vehicle Charger
11. Company Project

TRAINING PATTERN (DAY RELEASE)

★ 1-2 days in campus

Week No.	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
Year 1	18 weeks, 1-2 days/week at ITE (200 hours)																		5 weeks OJT (200 hours)					18 weeks, 1-2 days/week at ITE (160 hours)																		5 weeks OJT (200 hours)								
	22 weeks, 3-4 days/week OJT (430 hours)																							22 weeks, 3-4 days/week OJT (430 hours)																										
Year 2	18 weeks, 1-2 days/week at ITE (200 hours)																		5 weeks OJT (200 hours)					18 weeks, 1-2 days/week at ITE (160 hours)																		5 weeks OJT (200 hours)								
	22 weeks, 3-4 days/week OJT (430 hours)																							22 weeks, 3-4 days/week OJT (430 hours)																										
Year 3	18 weeks, 1-2 days/week at ITE (180 hrs)																		5 weeks OJT (200 hours)																															
	22 weeks, 3-4 days/week OJT (430 hours)																																																	