

**List of Competencies for On-the-Job Training (OJT)
Work-Study Diploma in Chemical Process Technology**

S/N	List of Competencies (Standard)	Company to indicate '✓' for OJT competencies it can provide
1	Manage compliance with WSH system	
2	Manage compliance with EMS guidelines	
3	Handle hazardous materials	
4	Perform separation process units and utilities operations	
5	Perform basic frontline maintenance	
6	Perform maintenance activities for process equipment and work areas	
7	Perform material transfer in process unit operation	
8	Perform heat transfer in process unit operation	
9	Perform equipment/instrument operations using physics concepts	
10	Perform equipment/instrument operations using chemistry concepts	
11	Implement materials management procedure	
12	Perform preparation and maintenance of production equipment	
13	Produce biopharmaceutical products	
14	Perform quality assurance processes	
15	Perform sampling for quality control	
16	Perform start-up operations	
17	Perform monitoring and control operations	
18	Perform shutdown operations	
19	Perform analyses of process unit using fluid mechanics principles	
20	Perform analyses of process unit using thermodynamics principles	
	Sub-total of Competencies (Standard)	
List of Competencies (Company-specific)		
1		
2		

3	
4	
5	
	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

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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 Chemical Process Technology

Course Objective

The course equips trainees with the skills, knowledge and professional attributes to execute and maintain safe and reliable plant/laboratory operations which includes performing unit and utility operations, basic maintenance work, process control system operations and biopharmaceutical operations, in accordance to Standard Operating Procedures (SOP). Trainees are also equipped to manage quality assurance and quality control processes to meet customers' requirement.

Module Synopsis

Module 1: Occupational Safety, Health & Environmental Management

On completion of this module, trainees should be able to maintain a safe and reliable workplace by managing compliance with Workplace Safety and Health (WSH) system and Environmental Management System/Environment, Health and Safety (EMS/EHS) guidelines as well as handle hazardous materials.

Module 2: Separation Unit Operations & Maintenance

On completion of the module, trainees should be able to perform process units and utilities operations, perform basic frontline maintenance as well as perform maintenance activities for process equipment and work areas.

Module 3: Material Energy Balance & Heat Transfer

On completion of the module, trainees should be able to perform material and energy transfer in process unit operations.

Module 4: Applied Physics & Chemistry in Process Plant

On completion of the module, trainees should be able to perform quality testing using physics and chemistry concepts.

Module 5: Biopharmaceutical Operations

On completion of the module, trainees should be able to implement materials management procedure, perform preparation and maintenance of production equipment and produce biopharmaceutical products.

Module 6: Quality Assurance & Quality Control Management

On completion of the module, trainees should be able to perform quality assurance for manufacturing/production processes and perform sampling for quality control.

Module 7: Reaction Unit Operations & Process Control Systems

On completion of the module, trainees should be able to perform start-up operations, perform monitoring and control operations and perform shutdown operations as well as operate a process control system.

Module 8: Applied Fluid Mechanics & Thermodynamics

On completion of the module, trainees should be able to perform analyses of process unit operations using fluid mechanics and thermodynamics principles.

Module 9: 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 10: On-the-Job Training

Work-Study Diploma in Chemical Process Technology Training Pattern (BLOCK RELEASE)

S/N	Class	OFFJT Dates in Campus
1	Y2 Apr 23 intake Class A	Mon 30 Sep 2024 to Fri 6 Dec 2024
2	Y2 Apr 23 intake Class B	Mon 13 Jan 2025 to Fri 21 Mar 2025
3	Y1 Apr 24 intake Class A	Mon 30 Sep 2024 to Fri 6 Dec 2024
4	Y1 Apr 24 intake Class B	Mon 13 Jan 2025 to Fri 21 Mar 2025