

**List of Competencies for On-the-Job Training (OJT)  
Work-Study Diploma in Agriculture & Aquaculture Technology**

S/N	List of Competencies (Standard)	Company to indicate '✓' for OJT competencies it can provide
1	Manage automation systems	
2	Interface systems with Internet of Things	
3	Perform predictive maintenance	
4	Set up artificial intelligence system	
5	Optimise farming parameters	
6	Implement artificial intelligence devices for automated farming	
7	Perform administrative formalities	
8	Manage agribusiness supply chain	
9	Manage waste disposal and system	
10	Monitor water quality	
<b>Select one of the following groups:</b>		
	<b>A: Agriculture Technology</b>	
11A	Optimise urban farming system and operation	
12A	Manage agriculture equipment and systems	
13A	Perform periodic maintenance on agriculture equipment and systems	
14A	Perform planting media testing and analysis	
15A	Implement plant nutrition program	
16A	Perform crop health diagnosis / Develop health management programme *	
17A	Perform control methods to treat crop disorders	
18A	Perform crop curation / Manage crop inventory / Perform crops preparation *	
19A	Prepare growing media on site for planting	
<b>----OR---</b>		
	<b>B: Aquaculture Technology</b>	
11B	Optimise aquaculture system and operation	
12B	Manage aquaculture equipment and systems	
13B	Perform periodic maintenance on aquaculture equipment and systems	
14B	Perform fish care	
15B	Perform optimised feeding	

S/N	List of Competencies (Standard)	Company to indicate '✓' for OJT competencies it can provide
16B	Perform fish growth operations	
17B	Evaluate fish health and diseases	
----OR----		
	<b>C: Poultry Egg Farm</b>	
11C	Optimise poultry system and operation	
12C	Manage egg farming systems	
13C	Perform periodic maintenance on egg farming systems	
<b>List of Competencies (Company-specific)</b>		
1		
2		
3		
4		
5		
	<b>Sub-total of Competencies (Company-specific)</b>	

\* Delete if not applicable

**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.

	Group A			Group B			Group C		
	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

\_\_\_\_\_  
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:			

Version: June'23

# WORK-STUDY DIPLOMA IN AGRICULTURE & AQUACULTURE TECHNOLOGY

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## MODULE OBJECTIVES

### Core Modules

#### **Crop Curation & Inventory**

On completion of the module, trainees should be able to perform crop curation and inventory, manage selection of indoors and outdoors edible and non-edibles. Trainees should also be able to identify activities of supply chain, perform technologies on traceability of fresh farm produce, and implement methods to collect, catalogue and maintain seed stock for future.

#### **Crop Health Management**

On completion of the module, trainees should be able to diagnose crop health disorders and determine common plant diseases and pests. Trainees should also be able to develop crop health management programme to treat crop disorder, determine acceptable level and economic threshold level for the responsible use of pesticides.

#### **Urban Farming Systems & Technologies**

On completion of the module, trainees should be able to determine different types of agricultural farms and design involved in urban agriculture. Trainees should also be able to perform resource optimisation, manage farming operations and sustainability.

#### **Fish Care & Growth Management**

On completion of the module, trainees should be able to identify parameters affecting the growth and health of the fish. Trainees should also be able to identify feed and nutritional requirement at different stages of life cycle.

#### **AgriFood & Nutrient Management in Farm**

On completion of the module, trainees should be able to perform soil, media testing, and analysis to meet international food standards for organic certification as well as regional variation in standards. Trainees should also be able to analyse fish nutrients based on feeding program.

#### **Agriculture 4.0 (mechanisation & automation in modern farm)**

On completion of the module, trainees should be able to perform mechanical automation farming processes such as seeding, harvesting and watering operations to improve the efficiency of urban farm. Trainees should also be able to interface systems using Internet of Things (IoT) and perform predictive maintenance using augmented reality (AR).

**Poultry Egg Farm Systems**

On completion of the module, trainees should be able to perform key poultry farming operations such as transporting and sorting through mechanical automation and poultry farming waste maintenance.

**Aquaculture Systems & Technologies**

On completion of the module, trainees should be able to identify common fish, crustaceans, aquatic plants, algae and other organisms in water for aquaculture farm operation and maintenance.

**Precision Farming**

On completion of the module, trainees should be able to apply technologies such as artificial intelligence devices and use data to manage a farm for optimal performance in terms of growth, process and yield in traceability.

**Water Quality & Diseases Management**

On completion of the module, trainees should be able to monitor and analyse water quality parameters and how it would impact the fish growth as well as the aquaculture systems. Trainees should also be able to determine different types of water and aquaculture system treatment, diagnostic techniques used to identify common aquatic diseases and parasites and manage waste disposal and system in the farms.

**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

		10 weeks	4 weeks	10 weeks	2 weeks	10 weeks	4 weeks	10 weeks	2 weeks
1 <sup>st</sup> Year	ITE	2 weeks block followed by 1 day/week	June Term Break	1 day/week	Sept Term Break	1 day/week	Dec Term Break	1 day/week	March Term Break
	Company	4 days/week		4 days/week		4 days/week		4 days/week	
2 <sup>nd</sup> Year	ITE	1 day/week	June Term Break	1 day/week	Sept Term Break	1 day/week	Dec Term Break	1 day/week	March Term Break
	Company	4 days/week		4 days/week		4 days/week		4 days/week	
3 <sup>rd</sup> Year	ITE	1 day/week	June Term Break	1 day/week	Sept Term Break				
	Company	4 days/week		4 days/week					

\* 1 day on campus