

# Model Curriculum

## Aquaculture Technician

SECTOR: AGRICULTURE & ALLIED  
SUB-SECTOR: FISHERIES  
OCCUPATION: AQUACULTURE  
REF ID: AGR/Q4903, V1.0  
NSQF LEVEL: 5



## Certificate

### CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

**AGRICULTURE SKILL COUNCIL OF INDIA**

for the

**MODEL CURRICULUM**

Complying to National Occupational Standards of  
Job Role/Qualification Pack: 'Aquaculture Technician' QP No. 'AGR/Q4,903 NSQF Level 5'

Date of Issuance: November 16<sup>th</sup>, 2016

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\* Valid up to the next review date of the Qualification Pack



Authorised Signatory  
(Agriculture Skill Council of India)

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# Aquaculture Technician

## CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Aquaculture Technician”, in the “Agriculture & Allied” Sector/Industry and aims at building the following key competencies amongst the learner

<b>Program Name</b>	<b>Aquaculture Technician</b>		
<b>Qualification Pack Name &amp; Reference ID.</b>	AGR/Q4903, v1.0		
<b>Version No.</b>	1.0	<b>Version Update Date</b>	
<b>Pre-requisites to Training</b>	Class 8, preferably		
<b>Training Outcomes</b>	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> <li>• <b>Identify/familiarize with different species for culture operations:</b> finfish and/or shellfish</li> <li>• <b>Perform pond preparation activities:</b> water intake activities, water treatment, pre-stocking pond preparation</li> <li>• <b>Perform various culture operations:</b> post-stocking pond preparation like feeding; periodic soil, water and fish sampling and netting operation etc</li> <li>• <b>Perform harvest &amp; post-harvest activities:</b> understand marketable size of fish and ensure desirable harvesting with minimum handling</li> <li>• <b>Practice health &amp; safety at the work place:</b> Well versed with health, safety and sanitation practices for self and spawns/seedlings/fish</li> </ul>		

This course encompasses 3 out of 3 National Occupational Standards (NOS) of “Aquaculture Technician” Qualification Pack issued by “Agriculture Skill Council of India”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<b>Introduction</b>  <b>Theory Duration</b> (hh:mm) 05:00  <b>Practical Duration</b> (hh:mm) 00:00  <b>Corresponding NOS Code</b> Bridge Module	<ul style="list-style-type: none"> <li>Understand General Discipline in the class room (Do's &amp; Don'ts)</li> <li>Study the Scope &amp; importance of Aquaculture in India</li> <li>Understand the Role of an Aquaculture Technician and the progression pathways</li> <li>Identify different species that can be cultured</li> </ul>	Laptop, white board, marker, projector
2	<b>Perform pond preparation activities</b>  <b>Theory Duration</b> (hh:mm) 20:00  <b>Practical Duration</b> (hh:mm) 40:00  <b>Corresponding NOS Code</b> AGR / N4919	<ul style="list-style-type: none"> <li>Perform water intake and storage activities from source to reservoir to pond</li> <li>Undertake water and soil treatment</li> <li>Control aquatic weeds &amp; insects</li> <li>Undertake fertilization of pond</li> <li>Undertake acclimatization procedures</li> <li>Stocking the seed at appropriate density &amp; species ratio</li> </ul>	Laptop, white board, marker, projector, Audio-visual aids, Water pump, Air or Oxygen diffusers, Aerators, Mechanical filters - like leaf filters, Tubes, Power backup
3	<b>Carry out culture operation</b>  <b>Theory Duration</b> (hh:mm) 30:00  <b>Practical Duration</b> (hh:mm) 40:00  <b>Corresponding NOS Code</b> AGR/N4920	<ul style="list-style-type: none"> <li>Perform post-stocking pond culture operations</li> <li>Carry out feed formulation and proper feeding</li> <li>Carry out periodic soil, water and fish sampling and netting operation</li> <li>Identify diseased fish</li> <li>Quarantine the diseased fish</li> <li>Apply manure/ fertilizer and therapeutics as prescribed</li> <li>Take care of the farm implements, nets and gears</li> <li>Undertake periodic pond maintenance activity</li> <li>Assess marketable size of fish and select desired size of fish for harvesting</li> <li>Ensure proper harvesting with minimum handling</li> <li>Undertake post-harvest care of the produce</li> </ul>	Laptop, white board, marker, projector, Audio-visual aids, Grinder, Mixer, Pelletiser, Profi-Feeders, scareheron, weed eradication equipments, Dip net or any other harvesting gear, Power backup

Sr. No.	Module	Key Learning Outcomes	Equipment Required
4	<p><b>Ensure safety, hygiene and sanitation practices in culture operations</b></p> <p><b>Theory Duration</b> (hh:mm) 15:00</p> <p><b>Practical Duration</b> (hh:mm) 30:00</p> <p><b>Corresponding NOS Code</b> AGR/N4918</p>	<ul style="list-style-type: none"> <li>Ensure safety measures and upkeep of water bodies used in fish culture</li> <li>Maintain personal hygiene &amp; safety</li> <li>Maintain health &amp; hygiene of seed during transportation and at various stages of growth &amp; maturity</li> </ul>	Laptop, white board, marker, projector, PPEs, first aid box
5	<p><b>Soft Skills/ Computer Literacy/ Financial Literacy</b></p> <p><b>Theory Duration</b> (hh:mm) 10:00</p> <p><b>Practical Duration</b> (hh:mm) 10:00</p> <p><b>Corresponding NOS Code</b></p>	<ul style="list-style-type: none"> <li>Basic Communication Skills</li> <li>Basic Computer/ Smart Phone Skills</li> <li>Various types of documents and their uses- Birth certificate, 10<sup>th</sup> Certificate, Ration Card, Voter Id Card, Aadhar Card, PAN card, Driving License, Bank Pass Book</li> <li>Various types of loan/credit available (relevant to the trainees' requirement) and the process to avail the same</li> </ul>	Computer, Audio-visual aids, Projector
	<p><b>Total Duration:</b></p> <p><b>Theory Duration</b> (hh:mm) <b>80:00</b></p> <p><b>Practical Duration</b> (hh:mm) <b>120:00</b></p>	<p><b>Unique Equipment Required:</b> Laptop, white board, marker, projector, Audio-visual aids, Water pump, Air or Oxygen diffusers, Aerators, Mechanical filters - like leaf filters, Tubes, Power backup, Grinder, Mixer, Pelletiser, Profi-Feeders, weed eradication equipments, Dip net or any other harvesting gear, safety shoes, goggles, first aid box</p>	

Grand Total Course Duration: **200 Hours, 0 Minutes**

*(This syllabus/ curriculum has been approved by [Agriculture Skill Council of India](#))*

## Trainer Prerequisites for Job role: “Aquaculture Technician” mapped to Qualification Pack: “AGR/Q4903, v1.0”

Sr. No.	Area	Details
1	<b>Description</b>	Trainer is responsible for educating the trainees – Various Pond preparation activities, Various Culture Operations, Safety & hygienic practices for culture
2	<b>Personal Attributes</b>	Trainer should be Subject Matter Expert. He/ she should have good communication, leadership, observation and practical oriented skills.
3	<b>Minimum Educational Qualifications</b>	Bachelor’s Degree, Preferably in Fisheries
4a	<b>Domain Certification</b>	Certified for Job Role: “ <u>Aquaculture Technician</u> ” mapped to QP: “ <u>AGR/Q4903, v1.0</u> ”. Minimum accepted score is 80%.
4b	<b>Platform Certification</b>	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “SSC/Q1402”. Minimum accepted % as per respective SSC guidelines is 70%.
5	<b>Experience</b>	<ul style="list-style-type: none"> <li>• M.Sc (Fisheries)</li> <li>• B.Sc.(Fisheries) with 1 Year experience</li> <li>• BSc Agriculture/Zoology graduate with 3 Years of experience in relevant field</li> <li>• Any +2 having 7/8 Years of experience in Culture Fisheries</li> </ul>

## Annexure: Assessment Criteria

<b>Assessment Criteria</b>	
<b>Job Role</b>	<b>Aquaculture Technician</b>
<b>Qualification Pack</b>	<b>AGR/Q4903, v1.0</b>
<b>Sector Skill Council</b>	<b>Agriculture</b>

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre(as per assessment criteria below)
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5	To pass the Qualification Pack, every trainee should score a minimum of 50% in aggregate
6	The marks are allocated PC wise; however, every NOS will carry a weight age in the total marks allocated to the specific QP



Assessment outcomes	Assessment criteria for outcomes	Marks Allocation			
		Total Marks (300)	Out Of	Theory	Skills Practical
<b>1. AGR/N4919: Perform pond preparation activities</b>	PC1. select the appropriate method of water intake either from river, creek or sea		17	6	11
	PC2. select the proper mesh size nets for water filtration before taking the water into the reservoir.		17	5	12
	PC3. select the suitable water treatment procedure such as chlorination		16	6	10
	PC4. select the appropriate method for eradication of predators and aquatic weed		16	4	12
	PC5. select appropriate fertilization methods for bloom development in the pond		17	5	12
	PC6. maintain the transparency of water at the optimum level		17	4	13
			<b>100</b>	<b>30</b>	<b>70</b>
<b>2. AGR/N4920: Carry out culture operations</b>	PC1. culture the aquatic organisms using good management practices		9	3	6
	PC2. use probiotics judiciously		10	3	7
	PC3. ensure proper stocking of seeds after proper acclimation		7	2	5
	PC4. harvest the culture organisms in the early morning and late evening hours		12	4	8
	PC5. make arrangements for icing organisms immediately after harvest		10	3	7
	PC6. select good feed with appropriate protein content		8	2	6
	PC7. employ proper feeding practices		9	3	6
	PC8. check for diseased or dying fish		10	3	7
	PC9. in case of a disease outbreak, separate the diseased fish from the healthy fish and put them in a quarantine tank		9	3	6
	PC10. diagnose the problem/disease and treat appropriately		8	2	6
	PC11. monitor the condition of fish in the quarantine tank for signs of improvement		8	2	6
			<b>100</b>	<b>30</b>	<b>70</b>
<b>3.AGR/N4918: Ensure safety, hygiene and sanitation practices for culture operation</b>	PC1. identify suitable materials required for fencing of the water body to protect fish culture		7	2	5
	PC2. identify common predators and preying organisms from water		7	2	5

	bodies				
	PC3. apply effective methods to keep away predators within water bodies		6	2	4
	PC4. restrict entry of unauthorized persons into the premises		8	3	5
	PC5. be fully aware of the dosage, toxicity level of chemicals / medicines in use for fish culture		6	2	4
	PC6. ensure all chemicals are adequately labelled and stored safely		8	3	5
	PC7. be aware of the possibilities of bacterial and other contamination from human handling		6	1	5
	PC8. apply effective systems and routines to ensure healthy and hygienic conditions during all stages of fish culture including transportation and marketing		6	1	5
	PC9. ensure the fish culture premises are constantly monitored/inspected for breaches in the protection provided by health and hygiene measures		7	2	5
	PC10. ensure salinity of water is maintained to specifications at all times with frequent tests		7	1	6
	PC11. ensure specified food is provided to organisms at regular intervals to prevent cannibalism		5	1	4
	PC12. perform routine tests for virus infections		8	3	5
	PC13. ensure all utensils and vessels used are decontaminated and clean		7	3	4
	PC14. restrict access only to authorized personnel		6	2	4
	PC15. implement effective security measures for prevention of theft/sabotage		6	2	4
			<b>100</b>	<b>30</b>	<b>70</b>
	<b>Total</b>	<b>300</b>	<b>300</b>	<b>90</b>	<b>210</b>
	<b>Percentage Weightage:</b>			<b>30%</b>	<b>70%</b>
	<b>Minimum Pass% to qualify (aggregate):</b>			<b>50%</b>	