



# Model Curriculum

**QP Name: Fishing Boat Mechanic**

**QP Code: AGR/Q5103**

**Version: 3.0**

**NSQF Level: 4**

**Model Curriculum Version: 2.0**

Agriculture Skill Council of India || Agriculture Skill Council of India (ASCI), 6th Floor, GNG Tower, Plot No. 10, Sector - 44

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## Training Parameters

<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Fisheries
<b>Occupation</b>	Assistance (Fisheries)
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/6223.9900
<b>Minimum Educational Qualification and Experience</b>	<p>Minimum Educational Qualification: 12th grade pass OR Completed 2nd year of 3-year diploma (after 10th) and pursuing regular diploma OR 10th grade pass plus 2-year NTC OR 10th grade pass plus 1-year NTC plus 1 year NAC OR 8th pass plus 2-year NTC plus 1-Year NAC plus CITS OR 10th grade pass and pursuing continuous schooling OR 10th Grade Pass with 2-year relevant experience OR Previous relevant Qualification of NSQF Level 3.0 with minimum education as 8th Grade pass with 3- year relevant experience OR Previous relevant Qualification of NSQF Level 3.5 with 1.5- year relevant experience</p>
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	24/02/2022
<b>Next Review Date</b>	24/02/2025
<b>NSQC Approval Date</b>	24/02/2022
<b>QP Version</b>	3.0
<b>Model Curriculum Creation Date</b>	24/02/2022

<b>Model Curriculum Valid Up to Date</b>	24/02/2025
<b>Model Curriculum Version</b>	2.0
<b>Minimum Duration of the Course</b>	390 Hours
<b>Maximum Duration of the Course</b>	390 Hours

## Program Overview

This section summarizes the end objectives of the program along with its duration.

### Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills to:

- Demonstrate the process of carrying out repair and maintenance of the boat's fuel and electrical systems.
- Demonstrate the process of carrying out repair and maintenance of the boat's propeller, hulls, hydraulic and steering systems.
- Describe the process of undertaking employability and entrepreneurial practices.
- Demonstrate various practices to maintain personal hygiene, cleanliness, and safety at the workplace.

### Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>Bridge Module</b>	<b>05:00</b>	<b>00:00</b>	<b>0:00</b>	<b>00:00</b>	<b>5:00</b>
Module 1: Introduction to the role of a Fishing Boat Mechanic	05:00	00:00	0:00	00:00	5:00
<b>AGR/N5106 Carry out repair and maintenance of the boat's fuel and electrical systems</b> <b>NOS Version- 2.0</b> <b>NSQF Level- 4</b>	<b>20:00</b>	<b>95:00</b>	<b>0:00</b>	<b>00:00</b>	<b>115:00</b>
Module 2: Repair and maintenance of the boat's fuel and electrical systems	20:00	95:00	0:00	00:00	105:00
<b>AGR/N5107: Carry out repair and maintenance of the boat's propeller, hulls, hydraulic and steering systems</b> <b>NOS Version- 2.0</b> <b>NSQF Level- 4</b>	<b>20:00</b>	<b>70:00</b>	<b>0:00</b>	<b>00:00</b>	<b>90:00</b>
Module 3: Repair and maintenance of the boat's propeller, hulls, hydraulic and steering systems	20:00	70:00	0:00	00:00	90:00

<b>AGR/N9903 Maintain health and safety at the workplace NOS Version- 3.0 NSQF Level- 4</b>	<b>15:00</b>	<b>15:00</b>	<b>0:00</b>	<b>00:00</b>	<b>30:00</b>
Module 4: Hygiene and cleanliness	03:00	03:00	0:00	00:00	06:00
Module 5: Safety and emergency procedures	12:00	12:00	0:00	00:00	24:00
<b>DGT/VSQ/N0102 Employability Skills NOS Version-1.0 NSQF Level-4</b>	<b>60:00</b>	<b>00:00</b>	<b>0:00</b>	<b>0:00</b>	<b>60:00</b>
Module 6: Employability Skills	60:00	00:00	0:00	0:00	60:00
<b>Total Duration</b>	<b>120:00</b>	<b>180:00</b>	<b>0:00</b>	<b>00:00</b>	<b>300:00</b>
<b>OJT: 90 hours</b>					

# Module Details

## Module 1: Introduction to the role of a Fishing Boat Mechanic

### Bridge Module

#### Terminal Outcomes:

- Discuss the role of a Fishing Boat Mechanic.

<b>Duration: 05:00</b>	<b>Duration: 0:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Describe the size and scope of the Agriculture industry and its sub-sectors.</li> <li>• Discuss the role and responsibilities of a Fishing Boat Mechanic.</li> <li>• Identify various employment opportunities for a Fishing Boat Mechanic.</li> </ul>	
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
NA	

## Module 2: Repair and maintenance of the boat's fuel and electrical systems

### Mapped to AGR/N5106 v2.0

#### Terminal Outcomes:

- Describe the process of preparing for the repair and maintenance activities.
- Demonstrate the process of carrying out repair and maintenance of the boat's fuel system and electrical system.
- Demonstrate various practices for effective resource optimisation.
- Demonstrate various waste management practices
- Discuss ways to promote diversity and inclusion at the workplace.

<b>Duration: 20:00</b>	<b>Duration: 95:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the importance of checking the condition of the fishing boat and various mechanical equipment onboard before departure.</li> <li>• Explain how to read gauges, dials and symbols associated with various onboard machineries.</li> <li>• Explain different types of boats and their maintenance schedule.</li> <li>• Explain the importance of using manufacturer-approved tools, equipment, spare parts for the repair and maintenance activities.</li> <li>• State the appropriate conditions required for the repair and maintenance of a boat.</li> <li>• State the recommended fluid levels such as the fuel, engine oil, power steering, power trim reservoirs and coolant to be maintained in the fuel system.</li> <li>• Explain how to check the fuel consumption to ensure it is within the prescribed limits.</li> <li>• Explain the importance and process of checking that the fuel has the recommended ratio of ethanol.</li> <li>• Explain how to check the battery's charge using a multimeter.</li> <li>• Explain the benefits of resource optimisation.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to arrange the repair and maintenance tools and equipment for use.</li> <li>• Demonstrate the process of checking the fuel system and hoses for any leakages and bad connections, and the tank surface for wear and tear or damage.</li> <li>• Show how to change the engine oil, oil filter and drive lubricants as per the maintenance schedule.</li> <li>• Demonstrate the process of repairing or replacing the worn-out or damaged fuel system components with the new ones.</li> <li>• Show how to plug the leakages in the fuel system and replace the defective hoses.</li> <li>• Demonstrate the process of testing the engine, exhaust and ventilation systems for correct functioning.</li> <li>• Demonstrate the process of removing the corroded terminals.</li> <li>• Demonstrate how to replace the worn-out or damaged cables.</li> <li>• Demonstrate the process of installing a new battery to replace the faulty battery.</li> <li>• Demonstrate the process of testing the working and functioning of all the pumps onboard.</li> </ul>

<ul style="list-style-type: none"> <li>• Explain the importance of recycling and disposing different types of waste as per the applicable regulations.</li> <li>• Explain the importance of inclusion of all genders and People with Disability (PwD) at the workplace.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate various practices to optimise the usage of various resources such as water and electricity.</li> <li>• Demonstrate the process of recycling and disposing different types of waste appropriately.</li> <li>• Demonstrate appropriate verbal and non-verbal communication that is respectful of genders and disability.</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Naval Architect Software, Simulator, Flag Signalling, Loud Hailer, VHF Radio, Hydrometer Voltmeter, Ammeter, Fire Fighting Equipment, Life Jackets, Ring Buoys, Lifeboat, Inflatable Life Raft</p>	

## Module 3: Repair and maintenance of the boat's propeller, hulls, hydraulic and steering systems

*Mapped to AGR/N5107 v2.0*

### Terminal Outcomes:

- Demonstrate the process of carrying out repair and maintenance of the boat's propeller, hulls, hydraulic and steering systems.
- Describe the process of maintaining the records and scheduling the maintenance.

<b>Duration: 20:00</b>	<b>Duration: 70:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Describe the process of carrying out repair and maintenance of the boat's propeller and hulls, and hydraulic system.</li> <li>• Describe the process of carrying out repair and maintenance of the boat's hydraulic system.</li> <li>• Explain the importance of ensuring the hydraulic oil is clean and free of any contaminants.</li> <li>• State the recommended maintenance schedule for hoses in the steering system.</li> <li>• State the recommended level of hydraulic fluid to be maintained in the boat's hydraulic system.</li> <li>• Explain the maintenance needs of the hydraulic valves.</li> <li>• Describe the process of carrying out repair and maintenance of the boat's steering system.</li> <li>• Describe the process of testing the steering system to ensure an appropriate and quick response from the engine and driving unit.</li> <li>• Explain the importance of ensuring the steering cables and connections are in a good condition.</li> <li>• State the recommended maintenance schedule for a variety of fishing boats</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of checking the propellers for dings, pitting, cracks and distortion.</li> <li>• Demonstrate the process of checking the hull for blisters, distortions and cracks.</li> <li>• Demonstrate the process of testing the bilge pump for the correct functioning and removing debris and clogging from the pump hose.</li> <li>• Show how to clean the hull, deck, and topsides using clean water and an environmentally safe cleaning solution.</li> <li>• Demonstrate the process of removing fouling from the propeller and applying grease on the propeller shaft.</li> <li>• Demonstrate the process of checking all the pipes, pipe connections and system hoses for wear and tear or damage.</li> <li>• Show how to clear the dust and debris around the dipsticks and fuel plugs.</li> <li>• Demonstrate how to clean and replace the hydraulic fluid filters with new ones as per the maintenance schedule.</li> <li>• Show how to check the hydraulic rod for corrosion and pitting, and clean it appropriately.</li> <li>• Demonstrate the process of applying new hydraulic system seals to replace</li> </ul>

the worn-out seals.

- Demonstrate the process of carrying out maintenance of the hydraulic valves.
- Demonstrate the process of checking the engine order telegraph to ensure proper functioning and response to the wheel.
- Show how to check the tightness of all the fasteners and fittings in the steering system.
- Demonstrate the process of checking all the hoses and fittings for wear and tear, kinks and leaks.
- Demonstrate the process of checking for any bends, nicks or damage to the steering ram shaft.
- Demonstrate the process of checking the belts and cables for wear and tear or damage.
- Show how to check actuating system tank for the required oil level and refill it.
- Demonstrate the process of checking the rudder carrier bearing and bottom sea gland and applying grease on it.
- Demonstrate how to test the pump's response to the gear.
- Demonstrate the process of checking the steering system for abnormal noise and heat.
- Show how to replace the worn-out belts and hoses with the new ones.
- Demonstrate the process of repairing the faulty hydraulic and steering systems.
- Demonstrate the process of removing the support rod from the steering/tilt tube, cleaning used grease and applying new grease on the support rod and the tilt tube.
- Demonstrate how to remove the steering wheel and re-grease the wheel shaft.

	<ul style="list-style-type: none"> <li>• Prepare a sample manual and/ or electronic record of repair and maintenance activities using the physical registers and/ or the relevant computer application.</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Hydrometer Voltmeter, Ammeter, Fuel Gauge, Tool Box</p>	

## Module 4: Hygiene and cleanliness

*Mapped to NOS AGR/N9903 v3.0*

### Terminal Outcomes:

- Discuss how to adhere to personal hygiene practices.
- Demonstrate ways to ensure cleanliness around the workplace.

<b>Duration: 03:00</b>	<b>Duration: 03:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the requirements of personal health, hygiene and fitness at work.</li> <li>• Describe common health-related guidelines laid down by the organizations/ Government at the workplace.</li> <li>• Explain the importance of good housekeeping at the workplace.</li> <li>• Explain the importance of informing the designated authority on personal health issues related to injuries and infectious diseases.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate personal hygiene practices to be followed at the workplace.</li> <li>• Demonstrate the correct way of washing hands using soap and water, and alcohol-based hand rubs.</li> <li>• Demonstrate the steps to follow to put on and take off a mask safely.</li> <li>• Show how to sanitize and disinfect one's work area regularly.</li> <li>• Demonstrate adherence to the workplace sanitization norms.</li> <li>• Show how to ensure the cleanliness of the work area.</li> </ul>
<b>Classroom Aids:</b>	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
<b>Tools, Equipment and Other Requirements</b>	
Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask	

## Module 5: Safety and emergency procedures

### Mapped to NOS AGR/N9903 v3.0

#### Terminal Outcomes:

- Describe how to adhere to safety guidelines.
- Show how to administer appropriate emergency procedures.

<b>Duration: 12:00</b>	<b>Duration: 12:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• List the Personal Protective Equipment (PPE) required at the workplace.</li> <li>• Describe the commonly reported hazards at the workplace.</li> <li>• Describe the hazards caused due to chemicals/pesticides/fumigants.</li> <li>• Describe the basic safety checks to be done before the operation of any equipment/machinery.</li> <li>• Describe the common first aid procedures to be followed in case of emergencies.</li> <li>• State measures that can be taken to prevent accidents and damages at the workplace.</li> <li>• Explain the importance of reporting details of first aid administered, to the reporting officer/doctor, in accordance with workplace procedures.</li> <li>• State common health and safety guidelines to be followed at the workplace.</li> </ul>	<ul style="list-style-type: none"> <li>• Check various areas of the workplace for leakages, water-logging, pests, fire, etc.</li> <li>• Demonstrate how to safely use the PPE and implements it as applicable to the workplace.</li> <li>• Display the correct way of donning, doffing and discarding PPE such as face masks, hand gloves, face shields, PPE suits, etc.</li> <li>• Sanitize the tools, equipment and machinery properly.</li> <li>• Demonstrate the safe disposal of waste.</li> <li>• Demonstrate procedures for dealing with accidents, fires and emergencies.</li> <li>• Demonstrate emergency procedures to the given workplace requirements.</li> <li>• Demonstrate the use of emergency equipment in accordance with manufacturers' specifications and workplace requirements.</li> <li>• Demonstrate the administration of first aid.</li> <li>• Prepare a list of relevant hotline/emergency numbers.</li> </ul>
<b>Classroom Aids:</b>	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
<b>Tools, Equipment and Other Requirements</b>	
Personal Protective Equipment, First Aid Kit, Equipment used in Medical Emergencies.	

## Module 6: Employability Skills (60 hours)

Mapped to NOS DGT/VSQ/N0102 v1.0

**Duration: 60:00**

### Key Learning Outcomes

#### Introduction to Employability Skills Duration: 1.5 Hours

After completing this programme, participants will be able to:

1. Discuss the Employability Skills required for jobs in various industries
2. List different learning and employability related GOI and private portals and their usage

#### Constitutional values - Citizenship Duration: 1.5 Hours

3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
4. Show how to practice different environmentally sustainable practices.

#### Becoming a Professional in the 21st Century Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.
6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

#### Basic English Skills Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e -mail using basic English

#### Career Development & Goal Setting Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

#### Communication Skills Duration: 5 Hours

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

#### Diversity & Inclusion Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

#### Financial and Legal Literacy Duration: 5 Hours

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely
19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

#### **Essential Digital Skills Duration: 10 Hours**

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

#### **Entrepreneurship Duration: 7 Hours**

26. Explain the types of entrepreneurship and enterprises
27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
29. Create a sample business plan, for the selected business opportunity

#### **Customer Service Duration: 5 Hours**

30. Describe the significance of analysing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional manner.
32. Discuss the significance of maintaining hygiene and dressing appropriately

#### **Getting Ready for apprenticeship & Jobs Duration: 8 Hours**

33. Create a professional Curriculum Vitae (CV)
34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
35. Discuss the significance of maintaining hygiene and confidence during an interview
36. Perform a mock interview
37. List the steps for searching and registering for apprenticeship opportunities

## Module 7: On-the-Job Training

### Mapped to Fishing Boat Mechanic

<b>Mandatory Duration: 90:00</b>	<b>Recommended Duration: 00:00</b>
<b>Location: On Site</b>	
<p><b>Terminal Outcomes</b></p> <ol style="list-style-type: none"> <li>1. Explain different types of boats and their maintenance schedule.</li> <li>2. Carry out repair and maintenance of the boat's fuel system and electrical system.</li> <li>3. Carry out repair and maintenance of the boat's propeller, hulls, hydraulic and steering systems.</li> <li>4. Set up a computer and relevant accessories/ peripherals for use according to the manufacturer's instructions.</li> <li>5. Maintain various work-related records electronically using the computer.</li> <li>6. Explain the requirements of personal health, hygiene and fitness at work.</li> <li>7. Explain the basic safety checks to be done before the operation of any equipment/machinery.</li> <li>8. Use the protective equipment suitable as per tasks and work conditions.</li> </ol>	

## Annexure

### Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
10th Class		5	Maintenance and upkeep of the fishing boat	0		Fishing Boat Mechanic with 5 Years of experience with 10th Pass. Experience certificate issued by registered fisheries society on official letter Head
Diploma	Fisheries	3	Maintenance and upkeep of the fishing boat	0		Regular Diploma of more than 15 months in fisheries
Graduate	Agriculture/ Fisheries/ Zoology	2	Maintenance and upkeep of the fishing boat	0		For the school Program minimum qualification of the Trainer should be Graduate (Fisheries Science/Industrial Fish & Fisheries / Zoology/Physics) with minimum 2 years teaching experience (will be considered industry experience)
B. Tech	Fisheries/ Mechanical/ Agriculture Engineering	1	Maintenance and upkeep of the fishing boat			
M. Tech	Fisheries	0		0		

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role “ <b>Fishing Boat Mechanic</b> ” mapped to QP: “AGR/Q5103, v3.0”, Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: “Trainer (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2601, v2.0”. The minimum accepted score as per MEPSC guidelines is 80%.

## Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
B.F. Sc		4	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams	0		Practical skills and knowledge required in installation, repairing, maintenance and monitoring of boat and boat equipment
B Tech	Fisheries Engineering and related streams	4	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams	0		Practical skills and knowledge required in installation, repairing, maintenance and monitoring of boat and boat equipment
B. Sc	Fisheries Science and related streams	5	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams			Practical skills and knowledge required in installation, repairing, maintenance and monitoring of boat and boat equipment
M. Tech	Aqua cultural Engineering/ Fisheries engineering and related streams	2	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams	0		Practical skills and knowledge required in installation, repairing, maintenance and monitoring of boat and boat equipment
M.F. Sc		2	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams	0		Practical skills and knowledge required in installation, repairing, maintenance and monitoring of boat and boat equipment
M. Sc	Fisheries Science and related streams	2	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/			Practical skills and knowledge required in installation, repairing, maintenance and monitoring of boat and boat equipment

			Marine Biology or related streams			
PhD	Fisheries Science and related streams	1	In Fisheries Science/ Zoology/ Aquaculture/ Applied aquaculture/ Marine Biology or related streams	0		Practical skills and knowledge required in installation, repairing, maintenance and monitoring of boat and boat equipment

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role “ <b>Fishing Boat Mechanic</b> ” mapped to QP: “AGR/Q5103, v3.0”, Minimum accepted score is 80%	Certified for the Job Role: “Assessor (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, v2.0”, with a minimum score of 80%.

## Assessment Strategy

### Assessment System Overview

In Agriculture Sector it is of ultimate importance that individuals dealing with crop production or livestock have the requisite knowledge and competencies to undertake the task. Based on the Assessment Criteria, SSC in association with empaneled AAs, define the test structure for the given job roles to cover the required skills and competencies. Assessment strategy consists of the following:

1. Multiple Choice Questions: To assess basic knowledge (Objective/Subjective)
2. Viva: To assess awareness on processes (Oral and/or written questioning)
3. Practical: To evaluate skills and identify competencies. (Observation)

Assessments for knowledge and awareness on processes may be conducted through 'real-time' internet-based evaluation or by conducting the same 'offline' through TABs. Skills and competencies are to be assessed by conducting 'practical' on the ground through qualified and ToA certified assessors.

An individual must have adequate knowledge and skills to perform a specific task, weightage for different aspects of the assessment is given as follows:

- Multiple Choice Questions: 20%-30%, depending on the specific QP
- Viva: 20%
- Practical: 50% - 60% (Involves demonstrations of applications and presentations of procedures/tasks and other components)
- Assessment will be carried out by certified assessors through empanelled assessment partners. Based on the results of the assessment; ASCI will certify the learners/candidates

### Testing Environment

Assessments are conducted on laptops, Mobiles and android tablets via both offline and online mode depending on the internet connectivity at the assessment location.

In remote locations/villages, assessments get delivered through tablets without the requirement of the Internet.

- Multilingual assessments (ASCI is conducting the assessments in 13 + languages pan India)
- Rubric driven assessments in Practical/Viva sections and responses recorded accordingly
- All responses, data, records and feedback stored digitally on the cloud
- Advanced auto-proctoring features – photographs, time-stamp, geographic-tagging, toggle- screen/copy-paste disabled, etc.
- Android-based monitoring system
- End to end process from allocation of a batch to final result upload, there is no manual intervention

- Assessment will normally be fixed for a day after the end date of the training / within 7 days of completion of training.
- Assessment will be conducted at the training venue
- The room where assessment is conducted will be set with proper seating arrangements with enough space to curb copying or other unethical activities
- Question bank of theory and practice will be prepared by ASCI /assessment agency and approved ASCI. Only from approved Question Bank assessment agency will prepare the question paper. Theory testing will include multiple-choice questions, pictorial questions, etc. which will test the trainee on his theoretical knowledge of the subject.
- The theory, practical and viva assessments will be carried out on the same day. In case of a greater number of candidates, the number of assessors and venue facilitation be increased and facilitated

<b>Assessment</b>			
<b>Assessment Type</b>	<b>Formative or Summative</b>	<b>Strategies</b>	<b>Examples</b>
Theory	Summative	MCQ/Written exam	Knowledge of facts related to the job role and functions. Understanding of principles and concepts related to the job role and functions
Practical	Summative	Structured tasks/Demonstration	Practical application /Demonstration /Application tasks
Viva	Summative	Questioning and Probing	Mock interviews on the usability of job roles/advantages /importance of adherence to procedures. Viva will be used to gauge trainee's confidence and correct knowledge in handling the job situation

The question paper pre-loaded in the computer /Tablet and it will be in the language as requested by the training partner.

## Assessment Quality Assurance framework

### Assessment Framework and Design:

Based on the Assessment Criteria, SSC in association with AAs will define the test structure for the given roles to cover the required skills and competencies. ASCI offer a bouquet of tools for multi-dimensional evaluation of candidates covering language, cognitive skills, behavioural traits and domain knowledge.

**Theoretical Knowledge** - Item constructs and types are determined by a theoretical understanding of the testing objectives and published research about the item types and constructs that have shown statistical validity towards measuring the construct. Test item types that have been reported to be coachable are not included. Based on these, items are developed by domain experts. They are provided with comprehensive guidelines of the testing objectives of each question and other quality measures.

**Type** – Questions based on Knowledge Required, Case-based practical scenario questions and automated simulation-based questions.

**Practical Skills** - The practical assessments are developed taking into consideration two aspects: what practical tasks is the candidate expected to perform on the job and what aspects of the job cannot be judged through theoretical assessments. The candidates shall be asked to perform either an entire task or a set of subtasks depending on the nature of the job role

**Type** – Standardized rubrics for evaluation against a set of tasks in a demo/practical task

**Viva Voce** - Those practical tasks which cannot be performed due to time or resource constraints are evaluated through the viva mode. Practical tasks are backed up with Viva for thorough assessment and complete evaluation

**Type** – Procedural questions, dos and don'ts, subjective questions to check the understanding of practical tasks.

The assessor has to go through an orientation program organized by the Assessment Agency. The training would give an overview to the assessors on the overall framework of QP evaluation. The assessor shall be given a NOS and PC level overview of each QP as applicable. The overall structure of assessment and objectivity of the marking scheme will be explained to them. The giving of marks will be driven by an objective framework that will maintain the standardization of the marking scheme.

### Type of Evidence and Evidence Gathering Protocol:

During the assessment the evidence collected by AAs and ASCI are:

- GeoTagging to track ongoing assessment
- AA's coordinator emails the list of documents and evidence (photos and videos) to the assessor one day before the assessment. The list is mentioned below:
  - Signed Attendance sheet
  - Assessor feedback sheet
  - Candidate feedback sheet

- Assessment checklist for assessor
  - Candidate Aadhar/ID card verification
  - Pictures of the classroom, labs to check the availability of adequate equipment's and tools to conduct the training and assessment
  - Pictures and videos of Assessment, training feedback and infrastructure.
- Apart from the Assessor, a Technical assistant is popularly known as Proctor also ensures the proper documentation and they verify each other's tasks.
  - To validate their work on the day of the assessment, regular calls and video calls are done.
  - On-boarding and training of the assessor and proctor are done on a timely basis to ensure that the quality of the assessment should be maintained.
  - Training covers the understanding of QP, NSQF level, NOS and assessment structure

### **Methods of Validation**

- Morning Check (Pre-Assessment): Backend team of AA calls and confirms assessor/technical SPOC event status. Assessor/Technical SPOC are instructed to reach the centre on time by 9:30 AM / as decided with TC and delay should be highlighted to the Training Partner in advance.
- Video Calls: Random video calls are made to the technical SPOC/assessor so as to keep a check on assessment quality and ensure assessment is carried out in a fair and transparent manner
- Aadhar verification of candidates
- Evening Check (Post Assessment): Calls are made to the ground team to ensure the event is over by what time and the documentation is done properly or not.
- TP Calling: To keep a check on malpractices, an independent audit team calls the TP on a recorded line to take confirmation if there was any malpractice activity observed in the assessment on part of the AA/SSC team. If calls are not connected, an email is sent to TP SPOC for taking their confirmation
- Video and Picture Evidence: Backend team collects video and pictures for assessment on a real-time basis and highlights any issue such as students sitting idle/ trainer helping the candidates during the assessment.
- Surprise Visit: Time to time SSC/AA Audit team can visit the assessment location and conduct a surprise audit for the assessment carried out by the ground team.
- Geo Tagging: On the day of the assessment, each technical SPOC is required to login into our internal app which is Geotagged. Any deviation with the centre address needs to be highlighted to the assessment team on a real-time basis.

### **Method for assessment documentation, archiving, and Access:**

- ASCI have a fully automated result generation process in association with multiple AAs
- Theory, Practical and Viva marks form the basis of the results and encrypted files generated to avoid data manipulation. All responses were captured and stored in the System with Time-Stamps at the end of AAs and SSC. NOS-wise and PC-wise scores can

be generated.

- Maker Checker concept: One person prepares the results and another audit result which is internally approved by AA at first and then gets vetted at the end of SSC
- All softcopies of documents are received from the on-ground tech team over email. The same is downloaded by our internal backend team and saved in Repository. The repository consists of scheme-wise folders. These scheme-wise folders have two job role-specific folders. These specific folders have Year wise and Month wise folders where all documents are saved in Batch specific folders. All Hard copies are filed and stored in the storeroom.

***Result Review & Recheck Mechanism –***

- Time-stamped assessment logs
- Answer/Endorsement sheets for each candidate
- Attendance Sheet
- Feedback Forms: Assessor feedback form, Candidate feedback form, TP feedback form
- The results for each of the candidates shall be stored and available for review (retained for 5 years/ till the conclusion of the project or scheme)

# References

## Glossary

Term	Description
<b>Declarative Knowledge</b>	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
<b>Key Learning Outcome</b>	The Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
<b>OJT (M)</b>	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on-site
<b>OJT (R)</b>	On-the-job training (Recommended); trainees are recommended the specified hours of training on-site
<b>Procedural Knowledge</b>	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work or produce a tangible work output by applying cognitive, affective or psychomotor skills.
<b>Training Outcome</b>	The Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
<b>Terminal Outcome</b>	The Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

## Acronyms and Abbreviations

Term	Description
AGR	Agriculture
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
PwD	People with Disability
PPE	Personal Protective Equipment
QP	Qualifications Pack