Model Curriculum

QP Name: Freshwater Aquaculture Farmer

QP Code: AGR/Q4905

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

Table of Contents

Training Parameters 3

Program Overview 5

Training Outcomes 5

Compulsory Modules 5

Module 1: Introduction to the role of a Freshwater Aquaculture Farmer 7

Module 2: Pre-stocking and stocking activities 8

Module 3: Post-stocking culture activities 10

Module 4: Process of harvesting, processing and marketing the aquaculture organisms 12

Module 5: Engagement in collective farming/activities 14

Module 6: Health, hygiene and safety in culture operations 16

Module 7: Employability Skills (60 hours) 18

Annexure 20

Trainer Requirements 20

Assessor Requirements 21

Assessment Strategy 22

References 27

Glossary 27

Acronyms and Abbreviations 28

Training Parameters

Sector	Agriculture
Sub-Sector	Fisheries
Occupation	Aquaculture
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2132.0900
Minimum Educational Qualification and Experience	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
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	30-12-2021
Next Review Date	30-12-2024
NSQC Approval Date	30-12-2021
QP Version	3.0
Model Curriculum Creation Date	30-12-2021

Model Curriculum Valid Up to Date	30-12-2024
Model Curriculum Version	2.0
Minimum Duration of the Course	390 Hours
Maximum Duration of the Course	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 performing pre-stocking and stocking activities.
- Demonstrate the process of performing post-stocking culture activities.
- Demonstrate the process of harvesting, processing and marketing the aquaculture organisms.
- Describe the process of engaging in collective farming/activity.
- Demonstrate various practices to maintain personal hygiene, cleanliness, and safety at the work.

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
Bridge Module	**05:00**	**00:00**	**0:00**	**0:00**	**05:00**
Module 1: Introduction to the role of a Freshwater Aquaculture Farmer	05:00	00:00	0:00	0:00	05:00
AGR/N4921 Perform pre-stocking and stocking activities **NOS Version-2.0** **NSQF Level-4**	**20:00**	**35:00**	**0:00**	**0:00**	**55:00**
Module 2: Pre-stocking and stocking activities	20:00	35:00	0:00	0:00	55:00
AGR/N4922 Perform post-stocking culture activities **NOS Version-2.0** **NSQF Level-4**	**20:00**	**70:00**	**0:00**	**0:00**	**90:00**
Module 3: Post-stocking culture activities	20:00	70:00	0:00	0:00	90:00
AGR/N4923 Harvest, process and market the aquaculture organisms **NOS Version-2.0** **NSQF Level-4**	**20:00**	**40:00**	**0:00**	**0:00**	**60:00**

Module 4: Process of harvesting, processing and marketing the aquaculture organisms	20:00	40:00	0:00	0:00	60:00
AGR/N9922 Engage in collective farming/activity **NOS Version-1.0** **NSQF Level-4**	**15:00**	**15:00**	**0:00**	**0:00**	**30:00**
Module 5: Engagement in collective farming/ activities	15:00	15:00	0:00	0:00	30:00
AGR/N4955 Follow the hygiene and safety practices in culture operations **NOS Version-1.0** **NSQF Level-4**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 6: Health, hygiene and safety in culture operations	10:00	20:00	0:00	0:00	30:00
DGT/VSQ/N0102 Employability Skills **NOS Version-1.0** **NSQF Level-4**	**60:00**	**00:00**	**0:00**	**0:00**	**60:00**
Module 8: Employability Skills	60:00	00:00	0:00	0:00	60:00
Total Duration	**150:00**	**180:00**	**0:00**	**0:00**	**330:00**
OJT: 60 hours					

Module Details

Module 1: Introduction to the role of a Freshwater Aquaculture Farmer

Bridge Module

Terminal Outcomes:

- Discuss the job role of a Freshwater Aquaculture Farmer.

Duration: 05:00	**Duration: 0:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the size and scope of the Agriculture industry and its sub-sectors. • Discuss the role and responsibilities of a Freshwater Aquaculture Farmer. • Identify various employment opportunities for a Freshwater Aquaculture Farmer.	
Classroom Aids	
Training kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
NA	

Module 2: Pre-stocking and stocking activities

Mapped to NOS AGR/N4921 v2.0

Terminal Outcomes:

- Demonstrate the process of carrying out soil conditioning.
- Describe the process of procuring and stocking the seeds for cultural activities.
- Describe the process of maintaining the water body.
- Demonstrate various practices for effective resource optimisation.
- Demonstrate various waste management practices.

Duration: 20:00	Duration: 35:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List various freshwater species of fish/crustaceans. • Explain how to check the pH levels of the soil. • Explain various practices for soil conditioning. • Describe the process of procuring seeds. • Explain the criteria for the selection of good quality seed. • Describe the process of acclimatising seeds before being stocked. • Explain how to check water quality parameters. • State various practices for reducing water loss from the culture pond. • Explain how to maintain the optimum pH level and salinity levels in the culture pond water. • Explain the importance and process of maintaining optimum water temperature and stocking density for various freshwater species. • Describe the process of aerating culture pond water to maintain the optimum dissolved oxygen level. • Describe the process of replacing water in the culture pond. • Explain how to treat wastewater using lime or recommended disinfectants.	• Demonstrate the use of a pH meter. • Demonstrate the process of performing soil conditioning by applying lime, gypsum, etc. • Demonstrate the process of acclimatising the seeds before stocking. • Show how to replace the pond water to remove organic waste and maintain the quality of water. • Demonstrate various practices to optimise the usage of various resources such as water and electricity. • Demonstrate the process of recycling and disposing different types of waste.

• Explain the benefits of resource optimisation. • Explain the importance the recycling and disposing different types of waste as per the applicable regulations.	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Water Pump, Air or Oxygen Diffusers, Aerators, Mechanical Filters - like Leaf Filters, Tubes, Power Backup, PVC Pipes	

Module 3: Post-stocking culture activities

Mapped to NOS AGR/N4922 v2.0

Terminal Outcomes:

- Describe the process of maintaining the physicochemical and biological parameters in the pond.
- Demonstrate the process of performing feed and health management.

Duration: 20:00	**Duration: 70:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain basic physicochemical and biological parameters to be maintained in the culture pond. • State appropriate soil and water conditions for the optimum growth of cultured organisms. • Explain how to perform periodic soil, water, and fish sampling and netting operation. • Explain how to determine and apply the appropriate dose of lime, manure and fertilisers to maintain the soil and water quality. • State the feeding habits of various aquaculture organisms. • Explain how to calculate the daily feed ration according to the feed intake rate and biomass of the aquaculture organisms. • Explain the need for appropriate diet composition of each variety of aquatic organisms in the culture system. • Explain how to determine the health condition of organisms stocked in the pond. • Explain the importance of using various chemicals and treatments in the recommended quantity. • List different types of diseases that can affect freshwater organisms. • Describe the process of applying medicinal treatment in the pond to cure unhealthy organisms.	• Demonstrate how to perform periodic soil, water, and fish sampling and netting operation. • Demonstrate the process of applying appropriate dosages of lime, manure and fertilizers to maintain the soil and water quality. • Demonstrate the process of applying the recommended herbicides and other chemicals to control the growth of aquatic weeds, algal bloom in the pond. • Show how to remove the aquatic weeds and algal bloom from the pond. • Demonstrate how to feed the freshwater organisms with the recommended quantity and quality of feed as per the feeding schedule. • Demonstrate the process of treating unhealthy fish with the recommended dose of prescribed treatment.

• Describe various methods to control aquatic weeds and algal bloom in the culture pond.	

Classroom Aids
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop

Tools, Equipment and Other Requirements
Grinder, Mixer, Pelletiser, Profi-Feeders, Scareheron, Weed Eradication Equipment, Hand Nets, Feeding Trays, Seechi Disk, ph Meter, Refractometer, Scissors, Water Testing Kit, Buckets, Hapas, Forceps, Weed Cutter, Dropper, Tissue Paper, Syringes, Simple Microscope, PCR Diagnostic Kit, Power Backup

Module 4: Process of harvesting, processing and marketing the aquaculture organisms

Mapped to NOS AGR/N4923 v2.0

Terminal Outcomes:

- Demonstrate the process of harvesting the aquaculture organisms.
- Demonstrate the process of sorting, grading, storing and marketing the aquaculture organisms.
- Discuss ways to promote diversity and inclusion at the workplace.

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• State maturity indicators of various aquaculture organisms. • State the appropriate time and method to harvest the aquaculture organisms safely such as ring seine, shore seine, etc. • Explain the use of various harvesting tools and equipment such as stake net, Chinese dip net, etc to harvest the aquaculture organisms. • Describe the process and various criteria for sorting and grading harvested aquaculture organisms. • State appropriate conditions to store the harvested aquaculture organisms. • Explain various activities in the process of marketing the produce such as identify market demand, connecting with buyers and negotiating the price, processing orders and payments, etc. • State the recommended practices for packing and transporting aquaculture organisms safely while protecting them from contamination. • Explain the use of various e-payment methods such as Aadhaar Enabled Payment System (AEPS), Unified Payment Interface (UPI), Unstructured Supplementary Service Data (USSD) payment, etc. • Explain how to calculate the benefit-	• Demonstrate the use of the relevant tools and equipment such as dip net, cast net, portable lift net, gill nets. • Demonstrate the process of harvesting the aquaculture organisms partially or completely according to the local demand and proximity to the relevant markets/ buyers. • Prepare a sample record of the harvested organism. • Demonstrate the process of carrying out sorting of organisms as per the relevant criteria such as species and maturity. • Demonstrate the process of grading the organisms mechanically on appropriate quality parameters such as size and appearance. • Demonstrate the process of packing the aquaculture organisms in appropriate containers for being transported to the market/ buyer. • Demonstrate the use of relevant e-payment methods such as the Aadhaar Enabled Payment System (AEPS), Unified Payment Interface (UPI), Unstructured Supplementary Service Data (USSD) payment, etc. • Prepare a sample record of sales and payments. • Demonstrate appropriate verbal and non-verbal communication that is respectful of genders and disability.

cost (B:C) ratio. • Explain the importance of inclusion of all genders and people with disability (PwD) at the workplace.	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Hand Nets and Cast Nets, Dip Nets, Hand Gloves, Boots, Head Gear, Autoclave, Transport Vehicles with Water storage capacity, Oxygen Cylinders, Ropes, Threads, Polyoropelene Tanks, Oxygen Tablets, Vitamin B 12 tablets for removal of stress during transportation, Siphoning Pipes, Portable DC Chargeable Battery Aerators, Small Ice Machine	

Module 5: Engagement in collective farming/activities

Mapped to NOS AGR/N9922 v1.0

Terminal Outcomes:

- Describe the process of creating PGs/ FIGs/ SHGs and preparing for its operations.
- Describe the process of conducting group meetings and training sessions.
- Describe the process of participating in collective farming/activities.

Duration: 15:00	**Duration: 15:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the process of preparing for the Producer Groups (PGs)/Farmers Interest Groups (FIGs)/ Self-Help Groups (SHGs) operations such as fundraising, induction of SMEs, investing in ICT products, etc. • Explain how to obtain access to the relevant government development programmes and funds. • Describe the process of commodity convergence with the relevant developmental programmes. • Explain the importance of planning optimal production to meet the market and household food security needs. • Explain the importance of setting the group objectives and deciding the group income-generating enterprises/ activities, methods of operation, benefits, etc. • Explain the importance of organising the PG/FIG/ SHG meetings and training sessions to resolve common concerns and get information about the latest developments in the field of work. • Explain the benefits of various capacity building exercises such as skill development and training programmes. • Explain the importance and process of conducting field trials to identify and resolve problems encountered	• Roleplay to illustrate how to conduct the initial group meetings to introduce the members, discuss the group objectives, group income-generating enterprises/ activities, methods of operation, etc. • Roleplay to illustrate how to organise field trials to identify and resolve problems encountered by group members in the field operations.

by farmers in the field operations. • Explain the concept of the group-owned bank to provide quality seeds, fertilisers, pesticides, tools and equipment to the member farmers. • Describe the process of using the group's credit facility. • Explain various core collective farming activities such as procuring inputs in bulk, large-scale farming, etc. • Explain the concept and benefits of forming forward and backward linkages. • State the relevant value addition practices such as processing, packing, upgrading the quality, etc. • Explain the benefits of connecting with similar groups to address common problems on a large scale.	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
NA	

Module 6: Health, hygiene and safety in culture operations

Mapped to NOS AGR/N4955 v1.0

Terminal Outcomes:

- Demonstrate the process of maintaining the water body and its hygiene.
- Demonstrate the process of maintaining the health of cultured organisms.
- Describe how to maintain personal health and safety.

Duration: 10:00	**Duration: 20:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain how to protect the aquaculture farm and cultured species from various threats. • Describe the process of identifying and removing predators or preying organisms from the culture pond or tank. • Explain the importance and process of carrying out regular cleaning of the culture pond or tank to remove sludge, algae, uneaten feed, etc. • State the recommended disinfectants for water bodies and the process of applying them. • State the recommended practices to protect the cultured organisms from air/ water/ fomite-borne contamination and diseases during and after harvesting. • Describe the process of sampling the cultured organisms to identify disease, disorders and presence of parasites and pathogens. • List the signs of stress or disease in the cultured organisms such as spots, lesions, erratic movement, etc. • Describe the process of identifying, quarantining and treating the diseased organisms. • List the signs of improvement in the quarantined organisms. • Explain the importance of removing the dead or moribund organisms from the water body promptly and	• Demonstrate the process of carrying out regular maintenance of dykes or fences in the culture pond. • Show how to remove sludge, algae, uneaten feed and any other waste materials from the culture pond or tank. • Demonstrate the process of applying necessary disinfectants or treatment in the culture pond or tank, to prevent disease outbreak and the growth of harmful organisms. • Demonstrate the process of sampling the cultured organisms regularly to identify the signs of stress, disease, phenotypic disorders and the presence of parasites and pathogens. • Demonstrate how to remove the dead and moribund organisms and dispose them in an environment-friendly manner. • Demonstrate how to safely use the PPE during hazardous aquaculture operations. • Demonstrate procedures for dealing with accidents and emergencies. • Demonstrate the administration of first aid.

disposing them safely. • Explain the importance of using the relevant PPE and ensuring it is damage-free. • State appropriate practices to be followed to maintain personal hygiene and prevent infections. • Explain the importance of storing hazardous chemicals, tools and equipment safely. • Describe the common first aid procedures to be followed in case of emergencies.	
Classroom Aids:	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask, First Aid Kit, Equipment used in Medical Emergencies.	

Module 7: 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

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
10th Class		5	Inland Fishery Production and management	0		Fresh water Aquaculture Farmer with 5 Years of experience after 10th pass.Experience certificate issued by registered fisheries society / Government Department of Fisheries/ on official letter Head
Diploma	Regular Diploma more than 15 months in fisheries	3	Inland Fishery Production and management	0		
Graduate	Agriculture / Fisheries / Zoology	2	Inland Fishery Production and management	0		For the school Program minimum qualification of the Trainer should be Graduate(Fisheries Science/Industrial Fish & Fisheries/Zoology). Their Teaching experience will be considered industry experience
Graduate	Fisheries Science/ Industrial Fish & Fisheries)	0		0		

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "**Freshwater Aquaculture Farmer**", mapped to QP: "AGR/Q4905, v2.0", 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". 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***	
Graduation	B.F. Sc	5	In Fisheries Science/ Aquaculture/ Applied aquaculture/ Freshwater Biology or related experience and fields	0	Graduation	B.F. Sc
Graduation	B. Sc (Fisheries and related streams)	5	In Fisheries Science/ Aquaculture/ Applied aquaculture/ Freshwater Biology or related experience and fields	0	Graduation	B. Sc (Fisheries and related streams)
Post-Graduation	M. F. Sc	2	In Fisheries Science/ Aquaculture/ Applied aquaculture/ Freshwater Biology or related experience and fields	0	Post-Graduation	M. F. Sc
Post-Graduation	M. Sc (Fisheries/ Applied Aquaculture and related streams	2	In Fisheries Science/ Aquaculture/ Applied aquaculture/ Freshwater Biology or related experience and fields	0	Post-Graduation	M. Sc (Fisheries/ Applied Aquaculture and related streams
PhD	Fisheries Science / Aquaculture and related streams	1	In Fisheries Science/ Aquaculture/ Applied aquaculture/Freshwater Biology or related experience and fields	0	PhD	Fisheries Science / Aquaculture and related streams

Assessor Certification	
Domain Certification	**Platform Certification**
"**Freshwater Aquaculture Farmer**", "AGR/Q4905, v2.0", 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

Assessment			
Assessment Type	**Formative or Summative**	**Strategies**	**Examples**
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:

- Geo Tagging 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 tool 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 assessor and proctor is 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 candidate shall be stored and available for review (retained for 5 years/ till the conclusion of the project or scheme)

References

Glossary

Term	Description
Declarative Knowledge	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.
Key Learning Outcome	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).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	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.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	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
QP	Qualifications Pack
PwD	People with Disability
PPE	Personal Protective Equipment