



Model Curriculum

QP Name: Pool Maintenance Worker

QP Code: SPF/Q1117

QP Version: 2.0

NSQF Level: 3

Model Curriculum Version: 2.0

Sports, Physical Education, Fitness and Leisure Sector Skill Council
207, DLF Tower, Galleria Mall, Mayur Vihar Extension, Delhi
E: priya.dwivedi@sportsskills.in

Table of Contents

Program Overview	4
Training Outcomes.....	4
Compulsory Modules.....	4
Module 1: Scope and trends in aquatic job roles	6
Module 2: Inspect and treat pool water.....	7
Module 3: Upkeep of pool systems and equipment	8
Module 4: Maintain pool for regular usage and during off-season.....	9
Module 5: Ensure safety standard at workplace	10
Module 6: Create an environmentally sustainable workplace	11
Module 7: Employability Skills.....	12
On-the-Job Training	13
Annexure.....	14
Trainer Requirements	14
Assessor Requirements.....	15
Assessment Strategy.....	16
Glossary	18
Acronyms and Abbreviations.....	19

Training Parameters

Sector	Sports
Sub-Sector	Sports Coaching and Fitness
Occupation	Pool Maintenance Worker
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3423.0501
Minimum Educational Qualification and Experience	10th Class pass OR 8th Class with 2 years of experience working in an aquatic environment OR 5th Class pass with 5 years of experience working in an aquatic environment
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 years
Last Reviewed On	27/01/2022
Next Review Date	27/01/2025
NSQC Approval Date	27/01/2022
QP Version	2.0
Model Curriculum Creation Date	27/01/2022
Model Curriculum Valid Up to Date	27/01/2025
Model Curriculum Version	2.0
Minimum Duration of the Course	360 Hours
Maximum Duration of the Course	360 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 will be able to:

- Evaluate pool water and treat pool water.
- Assess pool equipment.
- Install, test pool circulation and filtration system and components
- Resolve faults in pool circulation and filtration systems.
- Perform regular maintenance of the pool.
- Perform winterising process.
- Maintain general pool safety.
- Maintain safety with chemical use.
- Maintain hygiene and sanitation.
- Perform basic first aid.
- Work effectively with others.

Compulsory Modules

The table lists the modules, their duration and mode of delivery.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
SPF/N1153 – Maintain pool water NOS Version No. 2.0 NSQF Level: 3	15:00	15:00	15:00	00:00	45:00
(Bridge Module) Module 1: Scope and trends in aquatic job roles	05:00				05:00
Module 2: Inspect and treat pool water	10:00	15:00	15:00	00:00	40:00
SPF/N1154 – Maintain pool systems and equipment NOS Version No. 2.0 NSQF Level: 3	30:00	60:00	15:00	00:00	105:00
Module 3: Upkeep of pool systems and equipment	30:00	60:00	15:00	00:00	105:00
SPF/N1155 – Perform regular and seasonal maintenance of the pool NOS Version No. 2.0 NSQF Level: 3	15:00	30:00	30:00	00:00	75:00
Module 4: Maintain pool for regular usage and during off-season	15:00	30:00	30:00	00:00	75:00

SPF/N1156 – Maintain health and safety standards at workplace NOS Version No. 2.0 NSQF Level: 3	15:00	30:00	30:00	00:00	75:00
Module 5: Ensure safety standard at workplace	15:00	30:00	30:00	00:00	75:00
SGJ/Q1702 - Optimize resource utilization at workplace NOS Version No. 1.0 NSQF Level: 3	15:00	15:00	00:00	00:00	30:00
Module 6: Create an environmentally sustainable workplace	15:00	15:00	00:00	00:00	30:00
DGT/VSQ/N0101- Employability skills (30 Hours) NOS Version No-1.0 NSQF Level: 2	15:00	15:00	00:00	00:00	30:00
Module 7: Employability skills	15:00	15:00	00:00	00:00	30:00
Total Duration	105:00	165:00	90:00	00:00	360:00

Module Details

Module 1: Scope and trends in aquatic job roles

Bridge Module

Mapped to SPF/N1153, v2.0

Terminal Outcomes:

- Identify qualifications, skills ,and the experience required to progress in an aquatic industry.

Duration: 05:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> Outline the overview of the aquatic industry. Discuss the scope of employment and growth in the aquatic industry. Identify training and certifications to advance in aquatic industry . 	
Classroom Aids:	
Laptop, whiteboard, marker, projector, chart paper, clipboards	
Tools, Equipment and Other Requirements	
NA	

Module 2: Inspect and treat pool water

Mapped to SPF/N1153, v2.0

Terminal Outcomes:

- Evaluate pool water
- Treat pool water
- Maintain hygiene and sanitation

<i>Duration: 10:00</i>	<i>Duration: 15:00</i>
<p>Theory – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Classify the characteristics of water quality. • Recall the factors to be considered while preparing the pool water for a safe use. • Describe the ways to test the quality of pool water. • Explain chemical balance in pool water. • Differentiate between water contamination and chemical imbalance. • Discuss the factors contributing to the growth of waterborne bacteria like pseudomonas, aeruginosa, etc. • Discuss the ways to maintain personal and pool hygiene and its significance. • Identify the sanitizing agents which are safe for both machinery and equipment. • Identify the sanitizing agents safe for the pool users. 	<p>Practical – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Perform preparatory tasks for setting-up a pool for safe use. • Perform 3-way strips test to ascertain bromine, chlorine, pH (Potential of Hydrogen), and total alkalinity levels. • Perform 3-way Active Oxygen strips test • Perform 6-way strips test to ascertain Total Alkalinity, pH, Cyanuric Acid, Free Chlorine, Total Chlorine (bromine) and Total Hardness • Demonstrate water treatment processes like super-chlorination, shock dosing, dichlorination, ozonisation, etc. • Demonstrate ways to eliminate bacteria and organic contamination (algae) from different sections of the pool. • Draft a sample report for advanced hygiene and sanitation issues to appropriate authority.
<p>Classroom Aids:</p> <p>Laptop, whiteboard, marker, projector, chart paper, clipboards</p>	
<p>Tools, Equipment and Other Requirements</p> <p>Pool-tester kits, test strips, balancers, oxidisers, algicides, sanitisers, chlorine tablets, stabilised chlorine granules, bromine tablets, test-tubes, hose-pipe, skimmer, strainer crook, tile and liner cleaner, waterline cleaning paste, spring wash, trigger spray,</p>	

Module 3: Upkeep of pool systems and equipment

Mapped to SPF/N1154, v2.0

Terminal Outcomes:

- Assess pool equipment.
- Install, test pool circulation and filtration system and components.
- Resolve faults in pool circulation and filtration systems.

<i>Duration: 30:00</i>	<i>Duration: 60:00</i>
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • State the International Standards Organization (ISO) and Indian Standards to be complied with, for maintaining pool facility and equipment. • Classify hazardous and non-hazardous pool equipment and components. • Discuss the importance of following the relevant regulations and standard requirements while installing the circulation and filtration systems. • Recall the importance of following • Elaborate the implications of negligence in proper inspection, installation and testing of the circulation and filtration systems. • Elaborate on the importance of documentation the installation and repair activities. 	<ul style="list-style-type: none"> • Perform the steps involved in physical verification of damage of mechanical malfunctioning components of a pool (leaks, cracks, drains, handrails, ladder, etc.) • Demonstrate ways to identify malfunctioning of electrical components like filters, pumps, heaters, etc. • Demonstrate the process of extraction/ dismantling and installing of circulation and filtration systems as per manufacturer’s instructions. • Demonstrate the process of testing circulation and filtration systems post installation. • Draft a sample report highlighting advanced improvements and non-compliance filters and circulation system to higher authority.
Classroom Aids:	
Laptop, whiteboard, marker, projector, chart paper, clipboards, copy of POCSO (Protection of Children against Sexual Offences) and POSH (Prevention of Sexual Harassment) Acts	
Tools, Equipment and Other Requirements	
Cartridge filter, sand filter, filter cleaner, JellyClear cubes, flockfix cartridges, cleaning blush	

Module 4: Maintain pool for regular usage and during off-season

Mapped to SPF/N1155, v2.0

Terminal Outcomes:

- Perform regular maintenance of the pool
- Perform winterizing process

Duration: 15:00	Duration: 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the steps involved in inspection of pool for everyday use. • Explain the types of tools and equipment required for regular maintenance of the pool. • Explain winterization of the pool. • Recall the steps to be followed prior to winterizing the pool. • Discuss the process of winterizing the pool. 	<ul style="list-style-type: none"> • Demonstrate the use of skimmer to remove floating leaves and debris. • Demonstrate the use of vacuum cleaner to clean dirt and other loose particles from the bottom of the pool. • Demonstrate the use of brush or pumice stone to scrub the tiles along the waterline. • Calculate alkalinity, pH, and calcium hardness of the water to initiate winterizing of the pool. • Demonstrate the process and steps of winterizing the pool.
Classroom Aids:	
Laptop, whiteboard, marker, projector, chart paper, clipboards, lifeguard manual	
Tools, Equipment and Other Requirements	
Skimmer, strainer crook, tile and liner cleaner, waterline cleaning paste, spring wash, trigger spray, balancers, oxidisers, algicides, sanitisers, holiday pill, t-tubes, hose-pipe, pool cover, heater/filter cover.	

Module 5: Ensure safety standard at workplace

Mapped to SPF/N1156, v2.0

Terminal Outcomes:

- Maintain general pool safety
- Maintain safety with chemical use
- Perform basic first aid
- Work effectively with others

Duration: 15:00	Duration: 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the significance of monitoring children or non-swimmers around the swimming pool. • Explain the type of negligence around pool that can lead to potential health hazards and injuries. • Recall the guidelines of handling and storing of chemicals. • Explain the steps to be followed during medical emergencies. • Explain the factors that lead to injuries during the workout. • Recall the steps and specifics to perform artificial resuscitation. • Explain the significance and the process of reporting inappropriate behaviour and sexual harassment. • Discuss inappropriate behaviour and sexual harassment at workplace. 	<ul style="list-style-type: none"> • Show how to guide/keep children and non-swimming adults away from the dangers associated with the pool and the facilities. • Demonstrate the steps of handling and storing chemicals. • Demonstrate the process of administering first aid for common injuries. • Perform CPR (Cardio-Pulmonary Resuscitation) • Demonstrate emergency evacuation procedure and protocol in case of fire or natural disaster. • Apply gender-sensitive, non-discriminatory language.
Classroom Aids:	
Laptop, whiteboard, marker, projector, chart paper, clipboards, copy of POCSO (Protection of Children against Sexual Offences) and POSH (Prevention of Sexual Harassment) Acts	
Tools, Equipment and Other Requirements	
Gloves, safety goggles, first-aid kit, artificial resuscitation kit	

Module 6: Create an environmentally sustainable workplace

Mapped to SGJ/N1702, v1.0

Terminal Outcomes:

- Identify effective waste management techniques at the workplace.
- Ways to make the workplace environmentally sustainable.

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Recognize the environment-friendly materials available to replace conventional materials. • Discuss ways of disposing non-recyclable waste appropriately. • Explain common sources of pollution and ways to minimize it. 	<ul style="list-style-type: none"> • Prepare statutory documents relevant to safety and hygiene. • Demonstrate the methods of disposing non-recyclable waste. • Report malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment.
Classroom Aids:	
Laptop, whiteboard, marker, projector, chart paper, clipboards	
Tools, Equipment and Other Requirements	
Gloves, safety goggles, ladder	

Module 7: Employability Skills

Mapped to DGT/VSQ/N0101, v1.0

Terminal Outcomes:

- Understand Employability skills along with communication skills and constitutional values
- Able to set a goal and create a career plan, along with knowledge financial and legal knowledge

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes <ul style="list-style-type: none"> • Discuss the Employability Skills required for jobs in various industries. • 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 • Describe the role of digital technology in today's life • Explain entrepreneurship and opportunities available • Identify different types of customers and their needs • Explain skills required to become a 21st century professional • Teach to read and write basic English • Explain effective communication skills • Teach basic financial and legal knowledge 	Practical – Key Learning Outcomes <ul style="list-style-type: none"> • Create a career plan • Implement Self-awareness, time management, critical thinking, problem solving • Create sample word documents, excel sheets and presentations using basic features, utilize virtual collaboration tools to work effectively wherever necessary • Implement communication skills while handling different customers • Use appropriate basic English sentences/phrases while speaking. Differentiate between types of customers. • Create a biodata. • Use various sources to search and apply for jobs.
Classroom Aids:	
Charts, Models, Video presentation, Flip Chart, Whiteboard/Smart Board, Marker, Duster	
Tools, Equipment and Other Requirements	
computer (PC) with latest configurations, Computer Tables, Computer Chairs, UPS, Scanner cum printer	

On-the-Job Training

Mapped to Pool Maintenance Worker

Mandatory Duration: 90:00	Recommended Duration: 00:00
Location: On Site	
Terminal Outcomes <ul style="list-style-type: none">• Inspect swimming pool for safe use.• Identify types of rescue equipment.• Prepare a plan for equipment inspection.• Demonstrate ways to monitor and identify swimmers in distress.• Guide swimmers to use the swimming pool facility in a safe and appropriate manner.• Perform different types of rescue techniques to rescue swimmers in distress.• Follow safety protocols for injury prevention and medical emergencies.• Perform first aid.• Demonstrate ways of communicating with swimmers using gender-sensitive, non-discriminatory language.• Maintain hygiene and sanitation at the pool.	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
12 th Class	Pool Maintenance Specialist	Minimum 1 year	Must have worked in an aquatic facility	Minimum 1 year	worked in an aquatic facility	Must be physically strong and fit to perform heavy manual tasks. They must be quick learners, attentive to details and follow instruction.

Trainer Certification	
Domain Certification	Platform Certification
Certified ToT for job role "Pool Maintenance Worker" mapped to QP "SPF/Q1117, v2.0" Minimum accepted score is 80%	Recommended that the trainer is certified for the Job-Role "Trainer" (VET and skills), mapped to Qualification Pack: MEP/Q2601, v2.0" Minimum accepted score is 80%

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
12 th Class	Pool Maintenance Specialist	Minimum 2 years	Must have worked in an aquatic facility	Minimum 1 year	worked in an aquatic facility	All empaneled Assessors would have to undergo “Train the Assessor” Program conducted by SPEFL SC for each job role time to time.

Assessor Certification	
Domain Certification	Platform Certification
Certified ToA for job role “Pool Maintenance Worker” mapped to QP “SPF/Q1117, v2.0” Minimum accepted score is 80%	Recommended that the assessor is certified for the Job-Role “Assessor” (VET and skills) mapped to the Qualification Pack: MEP/Q2701, v2.0” Minimum accepted score is 80%

Assessment Strategy

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the SPEFL - Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down the proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on the knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for the theory part for each candidate at each examination/training center as per assessment criteria below.
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
6. To pass the Qualification Pack assessment, every trainee should score a minimum of 50% of aggregate marks to successfully clear the assessment.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Recommended Pass % aggregate for QP: 50

Each NOS in the Qualification Pack (QP) will be assigned a relative weightage for assessment based on the criticality of the NOS. Therein each Performance Criteria in the NOS will be assigned marks for or practical based on relative importance, criticality of function and training infrastructure.

The following tools are proposed to be used for final assessment:

1. **Practical Assessment:** This will comprise of a creation of mock environment in the skill lab which is equipped with all equipment's required for the qualification pack. Candidate's soft skills, communication, aptitude, safety consciousness, quality consciousness etc. will be ascertained by observation and will be marked in observation checklist. The product will be measured against the specified dimensions and standards to gauge the level of his skill achievements.
2. **Viva/Structured Interview:** This tool will be used to assess the conceptual understanding and the behavioral aspects as regards the job role and the specific task at hand. It will also include questions on safety, quality, environment, and equipment, etc.
3. **Written Test:** Under this test a few key items which cannot be assessed practically will be assessed. The written assessment will comprise of:
 - i. True / False Statements
 - ii Multiple Choice Questions
 - iii Matching Type Questions.
 - iv Fill in the blanks



Accreditation of Assessing Body:

The SPEFL SC's Accreditation process is divided into two steps:

1. Pre-accreditation process:

- Apply for Accreditation: Application form with desired documents in prescribed format to be sent.
- Document Compliance: to be done for ensuring the compliance and adherence of applied assessing body according to criteria laid down by SPEFL SC.
- Presentation on Quality Assurance: to be given by Assessing body highlighting the quality assurance process laid down by Assessing body at the process points.
- Once the assessing body clears the due diligence process, the accreditation is given along with terms and conditions.

2. Post-accreditation process: Post accreditation, the accredited assessing bodies needs to fulfil following minimum eligibility criteria or requisites for implementation:

- All Empanelled Assessors would have to undergo “**Train the Assessor**” Program conducted by SPEFL SC for each job role time to time.
- Accredited Assessing Body would have to abide with requisite timelines, policies and regulations declared by SPEFL sector skill council.
- Accredited Assessing Body with times would have to contribute to expansion of the questionnaire.

Glossary

Term	Description
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
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
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards