



Sewage Treatment Plant (STP) Operator

QP Code: PSC/Q0601

Version: 1.0

NSQF Level: 4.5

Water Management and Plumbing Skill Council || Unit No-606, DLF Prime Tower
Okhla Phase-1 New Delhi-110020

Contents

PSC/Q0601: Sewage Treatment Plant (STP) Operator	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
PSC/N0601: Monitoring and Managing Sewage Treatment Plant	5
PSC/N0604: Operating Sewage Treatment Plant (STP)	10
PSC/N0605: Inspecting Sewage Treatment Plant	16
PSC/N0603: Maintain Records & Reporting at Site	21
PSC/N0606: Solid Waste Management	26
PSC/N0602: Health and Safety Practices at Sewage Treatment Plant	31
PSC/N0137: Work Effectively with Others	36
DGT/VSQ/N0101: Employability Skills (30 Hours)	40
Assessment Guidelines and Weightage	45
<i>Assessment Guidelines</i>	45
<i>Assessment Weightage</i>	46
Acronyms	47
Glossary	48

PSC/Q0601: Sewage Treatment Plant (STP) Operator

Brief Job Description

The Sewage Treatment Plant Operator is responsible for the operation, monitoring, and maintenance of sewage treatment plants. They ensure that wastewater is treated effectively and in compliance with environmental regulations. Sewage Treatment Plant Operators perform various tasks to control and maintain the treatment process, troubleshoot issues, and ensure the plant's efficient and safe operation.

Personal Attributes

The individual must be meticulous and have a keen eye for detail. He / She must have problem solving skills, technical aptitude, adequate knowledge of various treatment methods, equipment operation, and the ability to interpret and analyze data, adaptable and flexible to adjust the approach, prioritize tasks, and respond effectively to unexpected circumstances.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [PSC/N0601: Monitoring and Managing Sewage Treatment Plant](#)
2. [PSC/N0604: Operating Sewage Treatment Plant \(STP\)](#)
3. [PSC/N0605: Inspecting Sewage Treatment Plant](#)
4. [PSC/N0603: Maintain Records & Reporting at Site](#)
5. [PSC/N0606: Solid Waste Management](#)
6. [PSC/N0602: Health and Safety Practices at Sewage Treatment Plant](#)
7. [PSC/N0137: Work Effectively with Others](#)
8. [DGT/VSQ/N0101: Employability Skills \(30 Hours\)](#)

Qualification Pack (QP) Parameters

Sector	Plumbing
Sub-Sector	Water Supply & Water Treatment & Quality Control
Occupation	Plumbing Plant Operations

Country	India
NSQF Level	4.5
Credits	17
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3132.0400
Minimum Educational Qualification & Experience	<p>Completed 1st year of UG (UG Certificate) (Chemical Engineering / Civil Engineering / Environmental Engineering)</p> <p>OR</p> <p>Pursuing 2nd year of UG (Civil Engineering / Chemical Engineering / Environmental Engineering)</p> <p>OR</p> <p>Completed 3 year diploma after 10th (Civil Engineering) with 1 Year of experience Relevant</p> <p>OR</p> <p>12th grade Pass with 2 Years of experience Relevant</p> <p>OR</p> <p>10th grade pass with 4 Years of experience Relevant</p> <p>OR</p> <p>Previous relevant Qualification of NSQF Level (3.5 as Sewage Treatment (STP) Associate and with minimum education as 8th Grade pass) with 3 Years of experience Relevant</p>
Minimum Level of Education for Training in School	12th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	20 Years
Last Reviewed On	NA
Next Review Date	NA
NSQC Approval Date	
Version	1.0

Remarks:

NA

PSC/N0601: Monitoring and Managing Sewage Treatment Plant

Description

this unit involves overseeing the entire treatment process. it also includes regularly monitoring process parameters such as flow rates, pH levels, dissolved oxygen, and solids concentration. Sampling and analyzing wastewater to assess treatment efficiency and quality. this unit aims for continuously optimizing plant performance to achieve effective and efficient sewage treatment.

Scope

The scope covers the following :

- monitoring the stp
- managing the stp

Elements and Performance Criteria

monitoring the stp

To be competent, the user/individual on the job must be able to:

- PC1.** able to monitor the ph, coagulation and flocculation, velocity of flow, discharge at inflow & outflow.
- PC2.** monitoring weather the biological process is being carried out as per the standards.
- PC3.** identify the mechanical instruments such as blowers, pumps, centrifugal separators, valves, aerators, etc are working properly
- PC4.** able to monitor the accumulation of sludge and pressure and temperature of digesters during evolution of gases while sludge digestion as per standards.
- PC5.** identify all the units in sewage treatment plant are in working condition.
- PC6.** able to monitor and record all meter and gauge readings.

managing the stp

To be competent, the user/individual on the job must be able to:

- PC7.** able to identify that the screens are not clogged
- PC8.** identify any kind of leakage at joint of the screen and water channel.
- PC9.** able to examine the equalization tank that it should not overflow or leaking, mixing & aeration system.
- PC10.** able to identify the improper working of aeration system, mixing, leakage at any point, etc...,
- PC11.** able to prepare and maintain the record of operation carried out by sewage treatment plant.
- PC12.** able to fill out the daily activity log sheets.
- PC13.** able to monitor the quality of water at the different units of the plants.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** schematic diagram and working principle of sewage treatment plant.

- KU2.** different types of mechanical instruments such as pumps, blowers, centrifugal separator, aerators.
- KU3.** knowledge of code manual prescribed by bis.
- KU4.** different types of meter and gauges.
- KU5.** working of different types of chemicals that are used during treatment of sewage.
- KU6.** knowledge of organic matter and inorganic matter.
- KU7.** different types of gas such as methane, carbon-di-oxide, hydrogen sulphide and many other gases.
- KU8.** knowledge of different types of graphs and readings.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** prepare checklists, reports and fill out forms in local language or hindi/english
- GS2.** understand the various colour codes, as per standard electrical, mechanical and civil nomenclature.
- GS3.** perform arithmetic calculations of addition, subtraction, multiplication and division processes
- GS4.**
 - read and interpret information (symbols, dimensions, terminology, dates etc.) given in local language or hindi
 -
- GS5.** state information, doubts and concerns about work related matters in local language or hindi/english
- GS6.** plan one's daily tasks to achieve maximum efficiency
- GS7.** be punctual and work as per agreed priorities
- GS8.** manage distractions and maintain workplace discipline
- GS9.** listen to the higher authorities carefully
- GS10.** be courteous
- GS11.** read and understand manuals, health and safety instructions, memos, other company documents.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>monitoring the stp</i>	15	26	3	6
PC1. able to monitor the ph, coagulation and flocculation, velocity of flow, discharge at inflow & outflow.	2	5	-	1
PC2. monitoring whether the biological process is being carried out as per the standards.	3	5	-	1
PC3. identify the mechanical instruments such as blowers, pumps, centrifugal separators, valves, aerators, etc are working properly	3	5	-	1
PC4. able to monitor the accumulation of sludge and pressure and temperature of digesters during evolution of gases while sludge digestion as per standards.	3	5	-	1
PC5. identify all the units in sewage treatment plant are in working condition.	2	3	-	1
PC6. able to monitor and record all meter and gauge readings.	2	3	3	1
<i>managing the stp</i>	15	29	2	4
PC7. able to identify that the screens are not clogged	2	3	-	1
PC8. identify any kind of leakage at joint of the screen and water channel.	2	3	-	-
PC9. able to examine the equalization tank that it should not overflow or leaking, mixing & aeration system.	2	4	-	1
PC10. able to identify the improper working of aeration system, mixing, leakage at any point, etc...,	2	4	-	-
PC11. able to prepare and maintain the record of operation carried out by sewage treatment plant.	2	6	-	1
PC12. able to fill out the daily activity log sheets.	2	4	2	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. able to monitor the quality of water at the different units of the plants.	3	5	-	-
NOS Total	30	55	5	10

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0601
NOS Name	Monitoring and Managing Sewage Treatment Plant
Sector	Plumbing
Sub-Sector	Water Supply & Water Treatment & Quality Control
Occupation	Plumbing Plant Operations
NSQF Level	4.5
Credits	3
Version	1.0
Next Review Date	NA

PSC/N0604: Operating Sewage Treatment Plant (STP)

Description

this unit is about operating the sewage treatment plant and understanding the various types of unit operations in sewage treatment plant. this unit is also about different terminologies that are used in stp. this unit also covers actively managing the treatment processes which includes adjusting process parameters, controlling equipment operation, and monitoring treatment efficiency

Scope

The scope covers the following :

- prepare for sewage treatment.
- carry out operations in stp

Elements and Performance Criteria

prepare for sewage treatment

To be competent, the user/individual on the job must be able to:

- PC1.** able to start the plant by switching on pump, mixer, controllers and other equipment.
- PC2.** perform the manual work in sewage treatment plant
- PC3.** able to check, open or close the valves
- PC4.** perform the operations at outflow & inflow of the plant by controlling the discharge.
- PC5.** able to collect the samples and facilitate the calibrations of samples.

Carry out operations in STP

To be competent, the user/individual on the job must be able to:

- PC6.** monitor and perform various operations in sewage treatment plant.
- PC7.** perform the mixing of chemicals if required.
- PC8.** handle the sludge properly that is being accumulated properly.
- PC9.** perform the operations involved in purification of gas in scrubber unit evolved from sludge digesters.
- PC10.** complete the documentation work as required.
- PC11.** able to check and clean the bar screen at frequent intervals
- PC12.** able to ensure no large gaps are formed due to corrosion of the screen
- PC13.** able to ensure no large gaps are formed due to corrosion of the screen
- PC14.** able to ensure that the air flow/ mixing is uniform over the entire floor of the tank.
- PC15.** able to adjust the placement of diffusers and the air-flow rate as needed.
- PC16.** able to manually evacuate settled muck/ sediments at least once in a year
- PC17.** able to check oil in the pump every day; top up if necessary
- PC18.**
 - able to check motor-to-pump alignment after every
 - dismantling operation
- PC19.** identify the condition of coupling and replace damaged parts immediately
- PC20.** identify the vibrations and tighten the anchor bolts and other fasteners

PC21. check condition of bearings, oil seals, mechanical seal and replace if necessary

PC22. able to follow the manufacturer's O&M manual with diligence.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** • importance and need of treating the water.
•
- KU2.** basic terminologies like discharge, flow velocity, settling velocity, turbulence, plan area organic loading rate, hydraulic loading rate, over flow rate, recirculation, efficiency.
- KU3.** physical characteristics of water like total solids, suspended solids, settleable solids, etc
- KU4.** chemical characteristics of water like ph chloride content, nitrogen content, fats, oil & grease, sulphates, hydrogen sulphide, dissolved oxygen, etc
- KU5.** biological characteristics of water like cod, bod, nitrification, de-nitrification, etc
- KU6.** decomposition by aerobic, anaerobic & facultative bacteria, neutralization, absorption, adsorption, oxidation/reduction, ion exchange process.
- KU7.** disposal of sewage effluents.
- KU8.** different operations performed in treatment of sewage like screening, grit chamber, flow equalization chamber, detritus tank, aeration tank, skimming tank, primary sedimentation tank, coagulation aided sedimentation
- KU9.** Biological operations like sludge digestion, trickling filters, rotatory biological contractors, membrane bio reactors, moving bed bio reactors, septic tank, activated sludge process, aber, waste stabilization pond, planted and unplanted drying beds, secondary sedimentation tank, sludge drying beds, 3rd degree treatment.
- KU10.** process of purifying gas in scrubber unit like purifying gas evolved during sludge digestion process.
- KU11.** method to clean different units present in sewage treatment plant.
- KU12.** handling of chemicals.
- KU13.** process of sewage treatment performed during treatment of sewage.
- KU14.** different methods of handling the sludge.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** prepare checklists, reports and fill out forms in local language or hindi/english
- GS2.** understand the various colour codes, as per standard electrical, mechanical and civil nomenclature.
- GS3.** ability to read from different sources- books screens in machines and signage.
- GS4.** perform arithmetic calculations of addition, subtraction, multiplication and division processes
- GS5.** read and interpret information (symbols, dimensions, terminology, dates etc.) given in local language or hindi
- GS6.** state information, doubts and concerns about work related matters in local language or hindi/english



Qualification Pack



- GS7.** plan one's daily tasks to achieve maximum efficiency
- GS8.** be punctual and work as per agreed priorities
- GS9.** manage distractions and maintain workplace discipline
- GS10.** listen to the higher authorities carefully
- GS11.** be courteous
- GS12.** identify ways to increase efficiency and reduce errors
- GS13.** read and understand manuals, health and safety instructions, memos, other company documents.
- GS14.** communicate with supervisor.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>prepare for sewage treatment</i>	7.5	14	5	3
PC1. able to start the plant by switching on pump, mixer, controllers and other equipment.	2	3	-	1
PC2. perform the manual work in sewage treatment plant	3	5	-	-
PC3. able to check, open or close the valves	1	2	-	1
PC4. perform the operations at outflow & inflow of the plant by controlling the discharge.	1	2	-	-
PC5. able to collect the samples and facilitate the calibrations of samples.	0.5	2	5	1
<i>Carry out operations in STP</i>	22.5	41	-	7
PC6. monitor and perform various operations in sewage treatment plant.	2	3	-	0.5
PC7. perform the mixing of chemicals if required.	2	3	-	0.5
PC8. handle the sludge properly that is being accumulated properly.	2	3	-	0.5
PC9. perform the operations involved in purification of gas in scrubber unit evolved from sludge digesters.	1	2	-	0.5
PC10. complete the documentation work as required.	2	3	-	0.5
PC11. able to check and clean the bar screen at frequent intervals	1	2	-	0.5
PC12. able to ensure no large gaps are formed due to corrosion of the screen	1	2	-	1
PC13. able to ensure no large gaps are formed due to corrosion of the screen	1	2	-	-
PC14. able to ensure that the air flow/ mixing is uniform over the entire floor of the tank.	0.5	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. able to adjust the placement of diffusers and the air-flow rate as needed.	1	2	-	1
PC16. able to manually evacuate settled muck/sediments at least once in a year	0.5	1	-	-
PC17. able to check oil in the pump every day; top up if necessary	0.5	1	-	-
PC18. <ul style="list-style-type: none"> • able to check motor-to-pump alignment after every • dismantling operation 	1	2	-	0.5
PC19. identify the condition of coupling and replace damaged parts immediately	1	2	-	0.5
PC20. identify the vibrations and tighten the anchor bolts and other fasteners	2	4	-	-
PC21. check condition of bearings, oil seals, mechanical seal and replace if necessary	2	4	-	1
PC22. able to follow the manufacturer's O&M manual with diligence.	2	4	-	-
NOS Total	30	55	5	10

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0604
NOS Name	Operating Sewage Treatment Plant (STP)
Sector	Plumbing
Sub-Sector	Water Supply & Water Treatment & Quality Control
Occupation	Plumbing Plant Operations
NSQF Level	4.5
Credits	3
Version	1.0
Next Review Date	NA

PSC/N0605: Inspecting Sewage Treatment Plant

Description

this unit is about inspecting different units in sewage treatment plant to check if they are functioning properly or not. this unit also includes visually examining equipment, pipes, and tanks for signs of damage or corrosion. Checking control panels, valves, and meters for proper operation. Inspecting electrical systems and safety features

Scope

The scope covers the following :

- inspection of the sewage treatment plant
- rectifying problems in the sewage treatment plant

Elements and Performance Criteria

inspection of the sewage treatment plant

To be competent, the user/individual on the job must be able to:

- PC1.** confirmation of design capacity or an estimation to analyse the capacity of plant.
- PC2.** check if preliminary treatment is being carried out properly or not
- PC3.** check for removing debris from screening, proper function of grit chamber and also if flow equalization chamber is in good condition or not.
- PC4.** inspecting the nuisance condition, cleanness on plant, flow measurement.
- PC5.** check whether the mixers, centrifugal separators, aerators, pumps are functioning properly.
- PC6.** ensure that the primary treatment is being carried out properly such as inflow should be light in colour, schedule for desludging.
- PC7.** ensuring the secondary treatment process is being carried out by proper specific standards.
- PC8.** taking proper precautions in hazardous areas such as chlorination unit, electrical unit and biological hazards such as sludge digester and scrubber unit.

troubleshooting the problems in stp

To be competent, the user/individual on the job must be able to:

- PC9.** identify the excessive noise caused by poor engineering/maintenance
- PC10.** identify the excessive vibration, overheating, loss in efficiency of pumping, etc
- PC11.** remove the debris in stp
- PC12.** identify the specific issue or malfunction in the sewage treatment plant.
- PC13.** able to gather information from operators, review data, and conduct observations
- PC14.** able to refer to equipment manuals, standard operating procedures, and guidelines
- PC15.** able to inspect equipment, piping, valves, and control panels for any visible signs of damage, leaks, or loose connections.
- PC16.** able to verify the accuracy and functionality of sensors, meters, and monitoring equipment
- PC17.** identify any abnormal trends or deviations from expected values.
- PC18.** able to narrow down the possible sources or areas of the issue by systematically checking

PC19. able to use diagnostic tools, equipment, and testing procedures to assess the performance of individual components and systems

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** steps involved in preliminary, primary, secondary, advanced treatment of sewage.
- KU2.** process of sewage treatment performed during treatment of sewage.
- KU3.** method to clean different units present in sewage treatment plant.
- KU4.** knowledge of code manual prescribed by bis
- KU5.** different types of gas such as methane, carbon-di-oxide, hydrogen sulphide and many other gases
- KU6.** adjusting settings, conducting tests, or replacing faulty parts.
- KU7.** Conducting visual inspections
- KU8.** analyze data
- KU9.** knowledge of consult manuals and guidelines

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** • prepare checklists, reports and fill out forms in local language or hindi/english
•
- GS2.** understand the various colour codes, as per standard electrical, mechanical and civil nomenclature.
- GS3.** perform arithmetic calculations of addition, subtraction, multiplication and division processes
- GS4.** read and interpret information (symbols, dimensions, terminology, dates etc.) given in local language or hindi
- GS5.** state information, doubts and concerns about work related matters in local language or hindi/english
- GS6.** plan one's daily tasks to achieve maximum efficiency
- GS7.** identify ways to increase efficiency and reduce errors
- GS8.** read and understand manuals, health and safety instructions, memos, other company documents.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>inspection of the sewage treatment plant</i>	16	27	2	3
PC1. confirmation of design capacity or an estimation to analyse the capacity of plant.	1	2	-	-
PC2. check if preliminary treatment is being carried out properly or not	1	3	-	-
PC3. check for removing debris from screening, proper function of grit chamber and also if flow equalization chamber is in good condition or not.	3	5	-	1
PC4. inspecting the nuisance condition, cleanness on plant, flow measurement.	3	5	-	1
PC5. check whether the mixers, centrifugal separators, aerators, pumps are functioning properly.	2	3	-	-
PC6. ensure that the primary treatment is being carried out properly such as inflow should be light in colour, schedule for desludging.	2	3	-	1
PC7. ensuring the secondary treatment process is being carried out by proper specific standards.	2	3	-	-
PC8. taking proper precautions in hazardous areas such as chlorination unit, electrical unit and biological hazards such as sludge digester and scrubber unit.	2	3	2	-
<i>troubleshooting the problems in stp</i>	14	28	3	7
PC9. identify the excessive noise caused by poor engineering/maintenance	1	2	-	1
PC10. identify the excessive vibration, overheating, loss in efficiency of pumping, etc	1	2	-	-
PC11. remove the debris in stp	2	4	-	1
PC12. identify the specific issue or malfunction in the sewage treatment plant.	1	3	2	1
PC13. able to gather information from operators, review data, and conduct observations	2	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. able to refer to equipment manuals, standard operating procedures, and guidelines	1	2	-	1
PC15. able to inspect equipment, piping, valves, and control panels for any visible signs of damage, leaks, or loose connections.	2	4	-	1
PC16. able to verify the accuracy and functionality of sensors, meters, and monitoring equipment	1	2	1	1
PC17. identify any abnormal trends or deviations from expected values.	1	2	-	1
PC18. able to narrow down the possible sources or areas of the issue by systematically checking	1	2	-	-
PC19. able to use diagnostic tools, equipment, and testing procedures to assess the performance of individual components and systems	1	2	-	-
NOS Total	30	55	5	10

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0605
NOS Name	Inspecting Sewage Treatment Plant
Sector	Plumbing
Sub-Sector	Water Supply & Water Treatment & Quality Control
Occupation	Plumbing Plant Operations
NSQF Level	4.5
Credits	1.5
Version	1.0
Next Review Date	NA

PSC/N0603: Maintain Records & Reporting at Site

Description

This unit focuses on the importance of maintaining accurate records and effectively reporting activities at a sewage treatment plant. It emphasizes the significance of documentation in ensuring compliance with regulations, monitoring plant performance, and facilitating continuous improvement. Trainees will learn how to record data, prepare reports, and communicate relevant information to stakeholders.

Scope

The scope covers the following :

- understand how to maintain records and data
- preparation of report
- respond to higher officials

Elements and Performance Criteria

understand how to maintain records and data

To be competent, the user/individual on the job must be able to:

- PC1.** able to read plan & specifications for different types of modifications in sewage treatment plant.
- PC2.** able to document data on pathogen reduction.
- PC3.** able to record the data on sludge accumulated and sludge treated.
- PC4.** able to maintain daily operational log.
- PC5.**
 - perform routine operational duties, flow meter readings, sample information with corresponding analytical data, etc.
 -
- PC6.** able to identify unusual conditions at the site
- PC7.** identify and report accident equipment hazard.
- PC8.** perform preventive maintenance

reporting to the higher officials

To be competent, the user/individual on the job must be able to:

- PC9.** reporting to the supervisor if any kind of problem occurs
- PC10.** identify spare parts inventory when in need
- PC11.** identify specifications on equipment from supplier
- PC12.** equipment inventory

respond to higher officials

To be competent, the user/individual on the job must be able to:

- PC13.** able to responding promptly to higher officials' inquiries or requests demonstrates a sense of urgency and professionalism.
- PC14.** able to provide clear and accurate information in responses to higher officials ensures effective communication and minimizes misunderstandings.

- PC15.** able to ensure that responses align with relevant policies, procedures, and regulations demonstrates a commitment to adhering to organizational guidelines.
- PC16.** able to maintain respectful and courteous tone in responses conveys professionalism and enhances the organization's reputation.
- PC17.** identify potential solutions or recommendations in responses demonstrates proactive thinking and a commitment to finding effective resolutions.
- PC18.** able to follow up on requests or inquiries to higher officials and providing updates or additional information as needed helps to maintain effective communication and ensure that all concerns are addressed satisfactorily.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** able to read plan and layouts of the plant.
- KU2.** able to analyse data from the graphs and meter and gauge reading.
- KU3.** different types of mechanical parts used in sewage treatment plant.
- KU4.** able to react calmly at different situations.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** prepare checklists, reports and fill out forms in local language or hindi/english
- GS2.** ability to read from different sources- books screens in machines and signage.
- GS3.** perform arithmetic calculations of addition, subtraction, multiplication and division processes
- GS4.** read and interpret information (symbols, dimensions, terminology, dates etc.) given in local language or hindi
- GS5.** state information, doubts and concerns about work related matters in local language or hindi/english
- GS6.** listen to the higher authorities carefully
- GS7.** communicate with supervisor.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>understand how to maintain records and data</i>	16	28	3	6
PC1. able to read plan & specifications for different types of modifications in sewage treatment plant.	2	3	-	1
PC2. able to document data on pathogen reduction.	2	4	2	1
PC3. able to record the data on sludge accumulated and sludge treated.	1	2	1	-
PC4. able to maintain daily operational log.	1	3	-	1
PC5. • perform routine operational duties, flow meter readings, sample information with corresponding analytical data, etc. •	2	3	-	1
PC6. able to identify unusual conditions at the site	2	3	-	-
PC7. identify and report accident equipment hazard.	3	5	-	1
PC8. perform preventive maintenance	3	5	-	1
<i>reporting to the higher officials</i>	4	8	-	2
PC9. reporting to the supervisor if any kind of problem occurs	1	2	-	1
PC10. identify spare parts inventory when in need	1	2	-	-
PC11. identify specifications on equipment from supplier	1	2	-	1
PC12. equipment inventory	1	2	-	-
<i>respond to higher officials</i>	10	19	2	2
PC13. able to responding promptly to higher officials' inquiries or requests demonstrates a sense of urgency and professionalism.	1	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. able to provide clear and accurate information in responses to higher officials ensures effective communication and minimizes misunderstandings.	2	5	-	-
PC15. able to ensure that responses align with relevant policies, procedures, and regulations demonstrates a commitment to adhering to organizational guidelines.	2	4	1	-
PC16. able to maintain respectful and courteous tone in responses conveys professionalism and enhances the organization's reputation.	1	2	-	-
PC17. identify potential solutions or recommendations in responses demonstrates proactive thinking and a commitment to finding effective resolutions.	2	3	-	-
PC18. able to follow up on requests or inquiries to higher officials and providing updates or additional information as needed helps to maintain effective communication and ensure that all concerns are addressed satisfactorily.	2	3	1	1
NOS Total	30	55	5	10

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0603
NOS Name	Maintain Records & Reporting at Site
Sector	Plumbing
Sub-Sector	Water Supply & Water Treatment & Quality Control
Occupation	Plumbing Plant Operations
NSQF Level	4.5
Credits	3
Version	1.0
Next Review Date	NA

PSC/N0606: Solid Waste Management

Description

this unit is about the management of solid waste that is accumulated during the process of sewage treatment. It covers topics such as waste characterization, segregation techniques, recycling and reuse options, landfill management, and regulatory compliance. The lecture emphasizes the importance of proper waste management practices to minimize environmental impact, promote sustainability, and ensure compliance with waste management regulations.

Scope

The scope covers the following :

- prepare for disposal of waste
- disposal of waste

Elements and Performance Criteria

prepare for disposal for waste

To be competent, the user/individual on the job must be able to:

- PC1.** identification of probable sites for operating them as waste processing-cum-disposal sites.
- PC2.** able to identify the sites based on rapid eia
- PC3.** able to follow the criteria stipulated in the rules.
- PC4.** identify the method for the proper disposal of waste or sludge generated in plant according to the generation of waste.

disposal of solid waste

To be competent, the user/individual on the job must be able to:

- PC5.** able to compliance with regulatory requirements for solid waste disposal.
- PC6.** identify the ways of effective segregation of solid waste into different categories.
- PC7.** able to handle and store solid waste to prevent contamination and odors properly
- PC8.** identify efficient transportation of solid waste to disposal facilities.
- PC9.** able to minimize the solid waste generation through waste reduction and recycling initiatives.
- PC10.** able to implement the safe and secure storage areas for temporary waste storage.
- PC11.** able to carry out adequate monitoring and control of waste disposal operations.
- PC12.** able regular inspection and maintenance of disposal facilities to ensure functionality and safety.
- PC13.** able to implement the measures to prevent the release of hazardous substances from solid waste.
- PC14.** Able to perform the best practices for landfill management, including liner installation and leachate collection systems.
- PC15.** compliance with occupational health and safety guidelines during waste disposal activities.
- PC16.** able to do regular evaluation and improvement of solid waste disposal processes and practices.

PC17. integration of sustainable waste management techniques, such as composting or anaerobic digestion.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** knowing the different types of solid waste such as domestic solid waste, industrial solid waste and biomedical solid waste.
- KU2.** knowledge of different types of domestic solid waste like garbage, rubbish, ashes, street sweeping.
- KU3.** understanding the different methods of municipal solid waste like sanitary landfilling method, gas production and its control, shredding & pulverization, barging/dumping into sea, composting, incineration & thermal pyrolysis, autoclaving.
- KU4.** knowledge of contamination and odors.
- KU5.** liner installation and leachate collection systems.
- KU6.** segregation of solid waste into different categories.
- KU7.** eia recommendations

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** prepare checklists, reports and fill out forms in local language or hindi/english
- GS2.** understand the various colour codes, as per standard electrical, mechanical and civil nomenclature.
- GS3.** • perform arithmetic calculations of addition, subtraction, multiplication and division processes
•
- GS4.** read and interpret information (symbols, dimensions, terminology, dates etc.) given in local language or hindi
- GS5.** state information, doubts and concerns about work related matters in local language or hindi/english
- GS6.** plan one's daily tasks to achieve maximum efficiency
- GS7.** manage distractions and maintain workplace discipline
- GS8.** be punctual and work as per agreed priorities
- GS9.** listen to the higher authorities carefully
- GS10.** be courteous
- GS11.** read and understand manuals, health and safety instructions, memos, other company documents.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>prepare for disposal for waste</i>	6	10	-	2
PC1. identification of probable sites for operating them as waste processing-cum-disposal sites.	1	2	-	-
PC2. able to identify the sites based on rapid eia	2	3	-	1
PC3. able to follow the criteria stipulated in the rules.	1	2	-	-
PC4. identify the method for the proper disposal of waste or sludge generated in plant according to the generation of waste.	2	3	-	1
<i>disposal of solid waste</i>	24	45	5	8
PC5. able to compliance with regulatory requirements for solid waste disposal.	2	4	-	-
PC6. identify the ways of effective segregation of solid waste into different categories.	2	3	-	1
PC7. able to handle and store solid waste to prevent contamination and odors properly	1	2	-	-
PC8. identify efficient transportation of solid waste to disposal facilities.	2	4	-	1
PC9. able to minimize the solid waste generation through waste reduction and recycling initiatives.	3	5	1	-
PC10. able to implement the safe and secure storage areas for temporary waste storage.	2	4	1	1
PC11. able to carry out adequate monitoring and control of waste disposal operations.	2	4	1	1
PC12. able regular inspection and maintenance of disposal facilities to ensure functionality and safety.	1	2	-	-
PC13. able to implement the measures to prevent the release of hazardous substances from solid waste.	2	4	1	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. Able to perform the best practices for landfill management, including liner installation and leachate collection systems.	3	5	-	1
PC15. compliance with occupational health and safety guidelines during waste disposal activities.	2	4	1	1
PC16. able to do regular evaluation and improvement of solid waste disposal processes and practices.	1	2	-	-
PC17. integration of sustainable waste management techniques, such as composting or anaerobic digestion.	1	2	-	1
NOS Total	30	55	5	10

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0606
NOS Name	Solid Waste Management
Sector	Plumbing
Sub-Sector	Water Supply & Water Treatment & Quality Control
Occupation	Plumbing Plant Operations
NSQF Level	4.5
Credits	1.5
Version	1.0
Next Review Date	NA

PSC/N0602: Health and Safety Practices at Sewage Treatment Plant

Description

this unit is about the health-related issues at stp and safety practices which workers need to be taken care off. health and safety practices plays a crucial role to ensure the well-being and protection of employees, visitors, and the environment. these practices aim to minimize the risks associated with handling and treating wastewater, hazardous chemicals, and potential biological contaminants.

Scope

The scope covers the following :

- health maintaining at stp
- safe work practises at stp

Elements and Performance Criteria

health maintaining at stp

To be competent, the user/individual on the job must be able to:

- PC1.** identify the hazards associated with different tasks in a wastewater treatment plant.
- PC2.** able to understand and acquire know-how of safety measures to be taken when in project site.
- PC3.** identify general risks, including working at height and hazards associated with different tasks in a sewage treatment plant.
- PC4.** understand and acquire know-how of safety measures when handling mechanical parts in statutory or moving position.
- PC5.** perform the changing of chlorine cylinders safely.
- PC6.** perform the automatic and manual functions at scrubber unit safely as per instructions.

safe work practises at stp

To be competent, the user/individual on the job must be able to:

- PC7.** inform the higher authorities of the accident or hazard that has occurred.
- PC8.** select the right personal protective equipment for different tasks in a waste treatment plant.
- PC9.** ensure safe storage of corrosive substances.
- PC10.** follow recommended personal hygiene and sanitation practices, for example, washing/sanitizing hands, covering face with
- PC11.** able to clean and disinfect work area, materials/supplies, equipment etc.. before and after use.
- PC12.** able to identify hygiene and sanitation issues.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** possible causes of risk, hazard or accident in the workplace
- KU2.** location of all the general health and safety equipment in the workplace

- KU3.** work practices and precautions to control and prevent risks, hazards and accidents
- KU4.** meaning of hazards and risks
- KU5.** do and donts in operation of waste treatment plant
- KU6.** practise of safe storage of corrosive substances.
- KU7.** able to detect chlorine leakage and control, scrubber unit gas leakage and control

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** prepare checklists, reports and fill out forms in local language or hindi/english
- GS2.** understand the various colour codes, as per standard electrical, mechanical and civil nomenclature.
- GS3.** perform arithmetic calculations of addition, subtraction, multiplication and division processes
- GS4.** state information, doubts and concerns about work related matters in local language or hindi/english
- GS5.** plan one's daily tasks to achieve maximum efficiency
- GS6.** be punctual and work as per agreed priorities
- GS7.** manage distractions and maintain workplace discipline
- GS8.** listen to the higher authorities carefully
- GS9.** be courteous
- GS10.** read and understand manuals, health and safety instructions, memos, other company documents

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>health maintaining at stp</i>	15	25	3	6
PC1. identify the hazards associated with different tasks in a wastewater treatment plant.	2	3	-	1
PC2. able to understand and acquire know-how of safety measures to be taken when in project site.	2	4	-	1
PC3. identify general risks, including working at height and hazards associated with different tasks in a sewage treatment plant.	2	4	-	1
PC4. understand and acquire know-how of safety measures when handling mechanical parts in statutory or moving position.	3	4	-	1
PC5. perform the changing of chlorine cylinders safely.	3	5	3	2
PC6. perform the automatic and manual functions at scrubber unit safely as per instructions.	3	5	-	-
<i>safe work practises at stp</i>	15	30	2	4
PC7. inform the higher authorities of the accident or hazard that has occurred.	2	4	-	-
PC8. select the right personal protective equipment for different tasks in a waste treatment plant.	3	6	-	1
PC9. ensure safe storage of corrosive substances.	3	6	-	-
PC10. follow recommended personal hygiene and sanitation practices, for example, washing/sanitizing hands, covering face with	3	6	-	1
PC11. able to clean and disinfect work area, materials/supplies, equipment etc.. before and after use.	2	4	2	1
PC12. able to identify hygiene and sanitation issues.	2	4	-	1



Qualification Pack



Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	30	55	5	10

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0602
NOS Name	Health and Safety Practices at Sewage Treatment Plant
Sector	Plumbing
Sub-Sector	Water Supply & Water Treatment & Quality Control
Occupation	Plumbing Plant Operations
NSQF Level	4.5
Credits	2.5
Version	1.0
Next Review Date	NA

PSC/N0137: Work Effectively with Others

Description

This unit covers basic etiquette and competencies required in behavior and interactions with others at the workplace.

Scope

The scope covers the following :

- Communicate effectively
- Work in a team effectively
- Respect diversity

Elements and Performance Criteria

Communicate effectively

To be competent, the user/individual on the job must be able to:

- PC1.** obtain complete information and instructions
- PC2.** seek clarifications from appropriate source when required
- PC3.** provide information accurately and clearly
- PC4.** use inclusive language (verbal, non-verbal and written) that is gender, disability and culturally sensitive

Work in a team effectively

To be competent, the user/individual on the job must be able to:

- PC5.** prioritize tasks as required
- PC6.** consult with and assist others to maximize effectiveness and efficiency in carrying out tasks
- PC7.** escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict
- PC8.** act upon constructive feedback from others

Respect diversity

To be competent, the user/individual on the job must be able to:

- PC9.** transact with everyone without any personal bias based on gender, disability, caste, religion, colour, sexual orientation and culture
- PC10.** recognize indicators of harassment and discrimination based on gender, disability, caste, religion, colour, sexual orientation and culture at workplace
- PC11.** report incidents of harassment and discrimination to appropriate authority

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** legislation, standards, policies, and procedures followed in the company relevant to employment, behavior, harassment, discrimination and performance conditions
- KU2.** reporting structure, inter-dependent functions, lines and procedures in the work area

- KU3.** escalation matrix and procedures for reporting work and employment related issues
- KU4.** types of harassment and discrimination based on gender, disability, caste, religion and culture and how to recognize it.
- KU5.** importance of effective communication and the impact of poor communication on the employee, the employer and the customer
- KU6.** importance of teamwork in organizational and individual success
- KU7.** various components of effective communication such as tone and pitch
- KU8.** importance of ethics and discipline for professional success
- KU9.** how to express and address grievances appropriately and effectively
- KU10.** importance and ways of managing interpersonal conflict effectively
- KU11.** different types of disabilities and the challenges faced by persons with disability (PwD)
- KU12.** laws, acts and provisions defined for PwD by the statutory bodies
- KU13.** government and private schemes and benefits available for PwD
- KU14.** Importance of gender sensitivity and equality.
- KU15.** gender, disability and cultural biases, stereotypes and impact on others
- KU16.** gender and its concepts such as gender roles, gender spectrum, gender as an identity
- KU17.** legislations, grievance redressal mechanisms, and penalties against harassment in the workplace

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write clear and legible notes, keep records, prepare to-do lists and take down instructions
- GS2.** write basic numbers, quantities and basic work-related terminology for operational requirements in the local language and English
- GS3.** read basic terminologies to accurately interpret labels, supervisor's instructions in the local language and English
- GS4.** read and interpret accurate information from work-related documents and various relevant work instructions and records in local
- GS5.** interact with the concerned personnel appropriately (correct protocol and manner of speaking etc.)
- GS6.** display active listening skills while interacting with co-workers and others in the workplace
- GS7.** deliver consistent and reliable service to internal and external customers
- GS8.** work with co-workers and supervisor to resolve any issues that threaten work quality as per the planned schedule

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Communicate effectively</i>	11	26	-	2
PC1. obtain complete information and instructions	3	8	-	-
PC2. seek clarifications from appropriate source when required	1	5	-	-
PC3. provide information accurately and clearly	3	7	-	1
PC4. use inclusive language (verbal, non-verbal and written) that is gender, disability and culturally sensitive	4	6	-	1
<i>Work in a team effectively</i>	11	25	-	3
PC5. prioritize tasks as required	3	8	-	1
PC6. consult with and assist others to maximize effectiveness and efficiency in carrying out tasks	3	8	-	1
PC7. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict	3	4	-	1
PC8. act upon constructive feedback from others	2	5	-	-
<i>Respect diversity</i>	8	12	-	2
PC9. transact with everyone without any personal bias based on gender, disability, caste, religion, colour, sexual orientation and culture	3	5	-	1
PC10. recognize indicators of harassment and discrimination based on gender, disability, caste, religion, colour, sexual orientation and culture at workplace	3	5	-	1
PC11. report incidents of harassment and discrimination to appropriate authority	2	2	-	-
NOS Total	30	63	-	7

National Occupational Standards (NOS) Parameters

NOS Code	PSC/N0137
NOS Name	Work Effectively with Others
Sector	Plumbing
Sub-Sector	Industrial / Non-Industrial Plumbing, Water Supply & Water Treatment & Quality Control, Sewerage & Sewage Treatment, Drainage, Water Harvesting & Ground Recharging, Firefighting & Safety Systems, Gas & Piping (Industrial / Medical), HVAC & Steam, Manufacturing of Plumbing / Firefighting Products, Micro-Hydel Power
Occupation	Plumbing Systems Installation and Maintenance, Designing, Sales, Material Handling, Plumbing Servicing, Plumbing Plant Operations
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	24/02/2022
Next Review Date	24/02/2025
NSQC Clearance Date	24/02/2022

DGT/VSQ/N0101: Employability Skills (30 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1. understand the significance of employability skills in meeting the job requirements

Constitutional values – Citizenship

To be competent, the user/individual on the job must be able to:

PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.

Basic English Skills

To be competent, the user/individual on the job must be able to:

PC4. speak with others using some basic English phrases or sentences

Communication Skills

To be competent, the user/individual on the job must be able to:

PC5. follow good manners while communicating with others

PC6. work with others in a team

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

PC7. communicate and behave appropriately with all genders and PwD

PC8. report any issues related to sexual harassment

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

PC9. use various financial products and services safely and securely

PC10. calculate income, expenses, savings etc.

PC11. approach the concerned authorities for any exploitation as per legal rights and laws

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

PC12. operate digital devices and use its features and applications securely and safely

PC13. use internet and social media platforms securely and safely

Entrepreneurship

To be competent, the user/individual on the job must be able to:

PC14. identify and assess opportunities for potential business

PC15. identify sources for arranging money and associated financial and legal challenges

Customer Service

To be competent, the user/individual on the job must be able to:

PC16. identify different types of customers

PC17. identify customer needs and address them appropriately

PC18. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC19. create a basic biodata

PC20. search for suitable jobs and apply

PC21. identify and register apprenticeship opportunities as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use basic spoken English language

KU6. Do and dont of effective communication

KU7. inclusivity and its importance

KU8. different types of disabilities and appropriate communication and behaviour towards PwD

KU9. different types of financial products and services

KU10. how to compute income and expenses

KU11. importance of maintaining safety and security in financial transactions

- KU12.** different legal rights and laws
- KU13.** how to operate digital devices and applications safely and securely
- KU14.** ways to identify business opportunities
- KU15.** types of customers and their needs
- KU16.** how to apply for a job and prepare for an interview
- KU17.** apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** communicate effectively using appropriate language
- GS2.** behave politely and appropriately with all
- GS3.** perform basic calculations
- GS4.** solve problems effectively
- GS5.** be careful and attentive at work
- GS6.** use time effectively
- GS7.** maintain hygiene and sanitisation to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
<i>Constitutional values – Citizenship</i>	1	1	-	-
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	1	1	-	-
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	1	-	-
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	3	4	-	-
PC9. use various financial products and services safely and securely	-	-	-	-
PC10. calculate income, expenses, savings etc.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
<i>Essential Digital Skills</i>	4	6	-	-
PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
PC13. use internet and social media platforms securely and safely	-	-	-	-
<i>Entrepreneurship</i>	3	5	-	-
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
<i>Customer Service</i>	2	2	-	-
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	1	3	-	-
PC19. create a basic biodata	-	-	-	-
PC20. search for suitable jobs and apply	-	-	-	-
PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total	20	30	-	-

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0101
NOS Name	Employability Skills (30 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	2
Credits	1
Version	1.0
Last Reviewed Date	NA
Next Review Date	27/05/2024
NSQC Clearance Date	27/05/2021

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each Element/ PC.
2. The assessment for the theory part will be based on 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 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 the Recommended Pass % aggregate for the QP.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
PSC/N0601.Monitoring and Managing Sewage Treatment Plant	30	55	5	10	100	15
PSC/N0604.Operating Sewage Treatment Plant (STP)	30	55	5	10	100	15
PSC/N0605.Inspecting Sewage Treatment Plant	30	55	5	10	100	15
PSC/N0603.Maintain Records & Reporting at Site	30	55	5	10	100	15
PSC/N0606.Solid Waste Management	30	55	5	10	100	15
PSC/N0602.Health and Safety Practices at Sewage Treatment Plant	30	55	5	10	100	10
PSC/N0137.Work Effectively with Others	30	63	-	7	100	10
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	5
Total	230	423	30	67	750	100

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.
Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standard	NOS are occupational standards which apply uniquely in the Indian context.

Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by N
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding	Knowledge and Understanding (KU) are statements that together specify the technical, generic, professional and organisational specific knowledge that an individual need in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of those OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS or set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS or set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.