Qualification Pack

Small Hydro Power Plant Technician

Electives: Electro-mechanical system/ Hydro-mechanical and Civil system

QP Code: SGJ/Q4010

Version: 1.0

NSQF Level: 4

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Contents

Qualification Pack

SGJ/Q4010: Small Hydro Power Plant Technician

Brief Job Description

Small Hydro Power Plant Technician is specialized to operate, test and maintain different electrical, hydro-mechanical, civil components of Small Hydro Power plant to meet the performance and reliability needs by incorporating quality workmanship and complying with all applicable codes, standards and safety requirements.

Personal Attributes

This job requires the individual to be hard working, diligent, organized, punctual, responsible and attentive to timely and safely complete the work at site. S/He must also demonstrate strong work ethics, good communication skills and should have an ability to properly follow the instructions of supervisor.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. SGJ/N1205: Study components and layout of Small Hydro Power (SHP) Plant
2. SGJ/N0701: Inspect different components of Small Hydro Power (SHP) Plant
3. SGJ/N0610: Start and shut Small Hydro Power (SHP) Plant
4. SGJ/N0106: Maintain Personal Health & Safety at project site
5. DGT/VSQ/N0102: Employability Skills (60 Hours)

Electives*(mandatory to select at least one):*

Elective 1: Electro-mechanical system

This elective is about operation and maintenance of electro-mechanical system of Small Hydro Power plant

1. SGJ/N0611: Study electro-mechanical system of Small hydro plant and its O&M

Elective 2: Hydro-mechanical and Civil system

This elective is about operation and maintenance of hydro-mechanical and civil system of Small Hydro Power plant

1. SGJ/N0612: Study Hydro-mechanical and Civil system of Small hydro plant and its O&M

Qualification Pack (QP) Parameters

Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Technician
Country	India
NSQF Level	4
Credits	21
Aligned to NCO/ISCO/ISIC Code	NCO/2015- 3115.0102
Minimum Educational Qualification & Experience	10th grade pass (with 2 years of any combination of NTC/NAC/CITS or equivalent) with NA of experience OR 10th grade pass (with two years of 3 years of regular diploma (in Electrical/ Mechanical/ Civil/ Instrumentation and related trades)) OR 11th grade pass with 1.5 years of experience of relevant experience OR 10th grade pass with 3 Years of experience of relevant experience OR 12th grade Pass ((Science) or equivalent) with NA of experience OR Previous relevant Qualification of NSQF Level (3) with 3 Years of experience of relevant experience OR Previous relevant Qualification of NSQF Level (3.5) with 1.5 years of experience of relevant experience
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	17/02/2028
NSQC Approval Date	18/02/2025

Qualification Pack

Version	1.0
Reference code on NQR	QG-04-ES-03678-2025-V1-SCGJ
NQR Version	1.0

Remarks:

Total 600 hours (450+150) i.e. 20 Credits (Including 145 hours Theory + 125 hours Practical + 60 hours employability skills + 120 hours OJT + either of the electives with 60 hours theory and 90 hours practical each)

SGJ/N1205: Study components and layout of Small Hydro Power (SHP) Plant

Description

This unit is about introducing basics of Small Hydro Power plant, its layout and components. It also describes use of various measuring devices in SHP Plant

Scope

The scope covers the following :

- Role and Responsibilities of a Small Hydro Power Plant Technician.
- Components and Layout of Small Hydro Power (SHP) Plant

Elements and Performance Criteria

Role and Responsibilities of a Small Hydro Power Plant Technician.

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

PC1. Explain the role and responsibilities of a Small Hydro Power Plant Technician.

PC2. Describe about the Small Hydro Power (SHP) plant and its components

PC3. Describe the standard operating procedures (SOP) to be followed for use of tools and equipment, service and minor repairs.

PC4. State the safety, health and environmental policies and regulations for the work place as well as for plant sites in general.

Components and Layout of Small Hydro Power (SHP) Plant

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

PC5. Explain the working principles of a hydro power plant and outline functioning of water mills.

PC6. Describe the functions of various components of a civil structure of a SHP.

PC7. Distinguish among small hydro plant, pico hydro plant and water mills vis-à- vis features, advantages, suitability etc.

PC8. Identify the main components of a water mill and pico hydro.

PC9. Determine the factors to categorize different types of streams

PC10. Highlight the factors to define critical points in water flow of the SHP.

PC11. Analyse the general layout of a small hydro plant along with all components.

PC12. Demonstrate how to estimate power generation potential of different SHP.

PC13. Operate various mechanical and electrical equipment to check their functioning as per the requirement.

PC14. Demonstrate the working of GPS, altimeters and other flow measuring devices

PC15. Undertake visit of a small hydro power plant to check the flow of water and operation of the plant.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. basic electricity and electricity generation
KU2. electrical symbols and single line diagrams
KU3. electricity rules
KU4. symbols and signs used in a SHP plant
KU5. types of hydro turbine & governors
KU6. water leakage and its economic value
KU7. potential hazards, risks and threats based on the nature of work
KU8. measures to deal with electrical accidents, fire accidents and mechanical injuries
KU9. ways to recognize common civil structure problems
KU10. ways to recognize common mechanical and electro mechanical problems

Generic Skills (GS)

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

GS1. read Standard Operating Practices (SOP) documents
GS2. complete statutory documents relevant to safety and hygiene
GS3. complete tasks efficiently and accurately within stipulated time
GS4. work with supervisors/team members to carry out work related tasks
GS5. record data on waste disposal at workplace
GS6. make timely decisions for efficient utilization of resources

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Role and Responsibilities of a Small Hydro Power Plant Technician.	**12**	**-**	**-**	**-**
PC1. Explain the role and responsibilities of a Small Hydro Power Plant Technician.	3	-	-	-
PC2. Describe about the Small Hydro Power (SHP) plant and its components	3	-	-	-
PC3. Describe the standard operating procedures (SOP) to be followed for use of tools and equipment, service and minor repairs.	3	-	-	-
PC4. State the safety, health and environmental policies and regulations for the work place as well as for plant sites in general.	3	-	-	-
Components and Layout of Small Hydro Power (SHP) Plant	**18**	**20**	**-**	**-**
PC5. Explain the working principles of a hydro power plant and outline functioning of water mills.	3	-	-	-
PC6. Describe the functions of various components of a civil structure of a SHP.	3	-	-	-
PC7. Distinguish among small hydro plant, pico hydro plant and water mills vis-à- vis features, advantages, suitability etc.	3	-	-	-
PC8. Identify the main components of a water mill and pico hydro.	3	-	-	-
PC9. Determine the factors to categorize different types of streams	3	-	-	-
PC10. Highlight the factors to define critical points in water flow of the SHP.	3	-	-	-
PC11. Analyse the general layout of a small hydro plant along with all components.	-	4	-	-
PC12. Demonstrate how to estimate power generation potential of different SHP.	-	4	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. Operate various mechanical and electrical equipment to check their functioning as per the requirement.	-	4	-	-
PC14. Demonstrate the working of GPS, altimeters and other flow measuring devices	-	4	-	-
PC15. Undertake visit of a small hydro power plant to check the flow of water and operation of the plant.	-	4	-	-
NOS Total	**30**	**20**	**-**	**-**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N1205
NOS Name	Study components and layout of Small Hydro Power (SHP) Plant
Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Technician
NSQF Level	4
Credits	3
Version	3.0
Last Reviewed Date	18/02/2025
Next Review Date	17/02/2028
NSQC Clearance Date	18/02/2025

SGJ/N0701: Inspect different components of Small Hydro Power (SHP) Plant

Description

This unit is about developing inspection schedule and inspection of various components of Small Hydro Power (SHP) Plant. It also describes corrective steps to be taken in case of malfunctioning of any components noticed during inspection of the SHP Plant

Scope

The scope covers the following :

- SHP Plant Components Inspection

Elements and Performance Criteria

SHP Plant Components Inspection

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

PC1. Explain the working principles of power house building and tail race channel.
PC2. Distinguish between different types of tanks such as desilting tank and surge tanks.
PC3. Identify hydro mechanical and electro- mechanical components of SHP.
PC4. Analyse the use of switchyard single line diagram, equipment and transmission system.
PC5. Prepare an inspection schedule of different components as per their mandated timelines.
PC6. Create a checklist to record the inspection status and malfunction issues.
PC7. Outline an organizational structure to define reporting authorities and designations.
PC8. Perform the steps of inspection process for different components of civil structure of SHP plant.
PC9. Demonstrate the inspection procedure of hydro-mechanical equipment of SHP plant.
PC10. Demonstrate the inspection procedure of electro-mechanical components of SHP plant.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. discharge measurement system
KU2. sediment measurement system
KU3. sizing of civil works components
KU4. diversion and intake works
KU5. channel /pipe/tunnel systems
KU6. desilting Tank, Forebay and surge tanks
KU7. penstock, anchor block, saddles, branching
KU8. power house building

KU9. tail race channel
KU10. hydro mechanical components of SHP
KU11. electro-mechanical equipment and systems
KU12. switchyard single line diagram, equipment and transmission system
KU13. station and unit auxiliaries
KU14. diesel generating sets, AC and DC supply

Generic Skills (GS)

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

GS1. read Standard Operating Practices (SOP) documents
GS2. complete tasks efficiently and accurately within stipulated time
GS3. work with supervisors/team members to carry out work related tasks
GS4. respond in slip trip and fall situation

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
SHP Plant Components Inspection	**20**	**30**	**-**	**-**
PC1. Explain the working principles of power house building and tail race channel.	5	-	-	-
PC2. Distinguish between different types of tanks such as desilting tank and surge tanks.	5	-	-	-
PC3. Identify hydro mechanical and electro-mechanical components of SHP.	5	-	-	-
PC4. Analyse the use of switchyard single line diagram, equipment and transmission system.	5	-	-	-
PC5. Prepare an inspection schedule of different components as per their mandated timelines.	-	5	-	-
PC6. Create a checklist to record the inspection status and malfunction issues.	-	5	-	-
PC7. Outline an organizational structure to define reporting authorities and designations.	-	5	-	-
PC8. Perform the steps of inspection process for different components of civil structure of SHP plant.	-	5	-	-
PC9. Demonstrate the inspection procedure of hydro-mechanical equipment of SHP plant.	-	5	-	-
PC10. Demonstrate the inspection procedure of electro-mechanical components of SHP plant.	-	5	-	-
NOS Total	**20**	**30**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N0701
NOS Name	Inspect different components of Small Hydro Power (SHP) Plant
Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Technician
NSQF Level	4
Credits	3
Version	3.0
Last Reviewed Date	18/02/2025
Next Review Date	17/02/2028
NSQC Clearance Date	18/02/2025

SGJ/N0610: Start and shut Small Hydro Power (SHP) Plant

Description

This unit is explaining Standard Operating Procedures (SOP) for starting and shutting down Small Hydro Power (SHP) plant

Scope

The scope covers the following :

- Start and shut down Small Hydro Power (SHP) Plant

Elements and Performance Criteria

Start and shut down SHP plant

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

PC1. State the Standard Operating Procedure (SOP) to follow before and while starting SHP plant.

PC2. Determine the important factors to ensure smooth operation of SHP plant.

PC3. Highlight the situations or factors which may become a reason of special or urgent shut down of SHP plant.

PC4. State the safety or precautionary measures that should be followed in emergency situations at the workplace.

PC5. Demonstrate the procedure to start water flow system and its linking with grid.

PC6. Implement the steps and procedure of normal shut down of SHP plant.

PC7. Perform the steps of special or emergency shut down procedure in an SHP plant.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. emergency situations for shutting of plant

KU2. situations for normal shut down of plant

KU3. situations for special shut down

KU4. dealing with tripping of units in abnormal conditions

KU5. potential hazards, risks and threats emergency shut down

KU6. preventive measures for electrical accidents, fire accidents and mechanical injuries

KU7. malfunction of different components of plant not requiring immediate shut down of unit for taking remedial measures

Generic Skills (GS)

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

GS1. read Standard Operating Practices (SOP) documents

GS2. complete statutory documents relevant to safety and hygiene
GS3. complete tasks efficiently and accurately within stipulated time
GS4. work with supervisors/team members to carry out work related tasks

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Start and shut down SHP plant	**26**	**24**	**-**	**-**
PC1. State the Standard Operating Procedure (SOP) to follow before and while starting SHP plant.	5	-	-	-
PC2. Determine the important factors to ensure smooth operation of SHP plant.	8	-	-	-
PC3. Highlight the situations or factors which may become a reason of special or urgent shut down of SHP plant.	7	-	-	-
PC4. State the safety or precautionary measures that should be followed in emergency situations at the workplace.	6	-	-	-
PC5. Demonstrate the procedure to start water flow system and its linking with grid.	-	8	-	-
PC6. Implement the steps and procedure of normal shut down of SHP plant.	-	8	-	-
PC7. Perform the steps of special or emergency shut down procedure in an SHP plant.	-	8	-	-
NOS Total	**26**	**24**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N0610
NOS Name	Start and shut Small Hydro Power (SHP) Plant
Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Operation and Maintenance
NSQF Level	4
Credits	2
Version	3.0
Last Reviewed Date	18/02/2025
Next Review Date	17/02/2028
NSQC Clearance Date	18/02/2025

SGJ/N0106: Maintain Personal Health & Safety at project site

Description

This unit is about maintaining health, safety and hygiene at workplace.

Scope

The scope covers the following :

- Adopt safe practices at workplace
- Follow emergencies, rescue and first aid procedures
- Follow good housekeeping practices and infection control guidelines

Elements and Performance Criteria

Adopt safe practices at workplace

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

PC1. explain the requirements for safe work area

PC2. identify and report any hazards, risks or breaches in site safety to the appropriate authority

PC3. follow recommended safe practices in handling physical, chemical, electrical and fire hazards and risk

PC4. use appropriate Personal Protective Equipment(PPE) for head, eye, hand, ear, face, body and fall protection specific to work condition

PC5. follow safe practices when working at height and in confined space

PC6. handle all required tools, tackles, materials and equipment safely

PC7. identify expiry dates, wear and tear issues of specified equipment and accordingly inform supervisor and undertake corrective measures

PC8. apply ergonomic principles wherever required

PC9. use safety signs, labels, charts and notices at workplace

PC10. identify work safety procedures and instructions for handling heavy components

Follow emergencies, rescue and first aid procedures

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

PC11. follow emergency and evacuation procedures in case of accidents, fires and natural calamities

PC12. use appropriate fire extinguishers for different types of fire

PC13. administer first aid to victim in case of various medical emergencies including bleeding, burns, choking, electric shock, cardiac arrest, etc.

PC14. use correct method to move injured person during an emergency

Follow good housekeeping practices and infection control guidelines

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

PC15. follow recommended personal hygiene, workplace hygiene and sanitation practices

PC16. clean and disinfect all material, tools and supplies before and after use

PC17. report immediately to concerned authorities regarding sign and symptoms of illness of self and other colleagues

PC18. follow processes specified for disposal of hazardous waste

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. importance of safety drills

KU2. importance of working in clean and safe environment

KU3. health and safety roles and responsibilities of relevant personnel within and outside the organization

KU4. reporting procedures in case of breaches or hazards for site safety, accidents and emergency situations

KU5. basic ergonomic principle

KU6. key internal and external source of health and safety information

KU7. meaning of hazards, risk and near miss

KU8. importance of Personal Protective Equipment required for specific job

KU9. forms and classification of hazardous substances

KU10. health effect associated with exposure to environmental pollution

KU11. housekeeping activities relevant to task

KU12. symptoms of infection like fever, cough, swelling and inflammation

Generic Skills (GS)

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

GS1. record data on waste disposal at workplace

GS2. complete statutory documents relevant to safety and hygiene

GS3. fill safety formats for near miss, unsafe condition

GS4. identify potential safety risk and report to appropriate authority

GS5. communicate and collaborate with others to incorporate sustainable practices

GS6. interpret general safety guidelines, labels, charts and signage

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Adopt safe practices at workplace	**13**	**19**	**-**	**-**
PC1. explain the requirements for safe work area	2	-	-	-
PC2. identify and report any hazards, risks or breaches in site safety to the appropriate authority	2	3	-	-
PC3. follow recommended safe practices in handling physical, chemical, electrical and fire hazards and risk	1	2	-	-
PC4. use appropriate Personal Protective Equipment(PPE) for head, eye, hand, ear, face, body and fall protection specific to work condition	2	4	-	-
PC5. follow safe practices when working at height and in confined space	1	1	-	-
PC6. handle all required tools, tackles, materials and equipment safely	1	2	-	-
PC7. identify expiry dates, wear and tear issues of specified equipment and accordingly inform supervisor and undertake corrective measures	1	2	-	-
PC8. apply ergonomic principles wherever required	1	2	-	-
PC9. use safety signs, labels, charts and notices at workplace	1	1	-	-
PC10. identify work safety procedures and instructions for handling heavy components	1	2	-	-
Follow emergencies, rescue and first aid procedures	**4**	**4**	**-**	**-**
PC11. follow emergency and evacuation procedures in case of accidents, fires and natural calamities	1	1	-	-
PC12. use appropriate fire extinguishers for different types of fire	1	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. administer first aid to victim in case of various medical emergencies including bleeding, burns, choking, electric shock, cardiac arrest, etc.	1	1	-	-
PC14. use correct method to move injured person during an emergency	1	1	-	-
Follow good housekeeping practices and infection control guidelines	**4**	**6**	**-**	**-**
PC15. follow recommended personal hygiene, workplace hygiene and sanitation practices	1	1	-	-
PC16. clean and disinfect all material, tools and supplies before and after use	1	1	-	-
PC17. report immediately to concerned authorities regarding sign and symptoms of illness of self and other colleagues	1	2	-	-
PC18. follow processes specified for disposal of hazardous waste	1	2	-	-
NOS Total	**21**	**29**	**-**	**-**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N0106
NOS Name	Maintain Personal Health & Safety at project site
Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Health & Safety , Installation, Solar Panel Installation Technician
NSQF Level	4
Credits	1
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	07/05/2028
NSQC Clearance Date	08/05/2025

DGT/VSQ/N0102: Employability Skills (60 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
- Career Development & Goal Setting
- 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. identify employability skills required for jobs in various industries

PC2. identify and explore learning and employability portals

Constitutional values – Citizenship

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

PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.

PC4. follow environmentally sustainable practices

Becoming a Professional in the 21st Century

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

PC5. recognize the significance of 21st Century Skills for employment

PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

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

PC7. use basic English for everyday conversation in different contexts, in person and over the telephone

PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English

PC9. write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

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

PC10. understand the difference between job and career

PC11. prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

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

PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings

PC13. work collaboratively with others in a team

Diversity & Inclusion

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

PC14. communicate and behave appropriately with all genders and PwD

PC15. escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

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

PC16. select financial institutions, products and services as per requirement

PC17. carry out offline and online financial transactions, safely and securely

PC18. identify common components of salary and compute income, expenses, taxes, investments etc

PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

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

PC20. operate digital devices and carry out basic internet operations securely and safely

PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively

PC22. use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

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

PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research

PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion

PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

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

PC26. identify different types of customers

PC27. identify and respond to customer requests and needs in a professional manner.

PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

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 English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

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

GS1. read and write different types of documents/instructions/correspondence

GS2. communicate effectively using appropriate language in formal and informal settings

GS3. behave politely and appropriately with all
GS4. how to work in a virtual mode
GS5. perform calculations efficiently
GS6. solve problems effectively
GS7. pay attention to details
GS8. manage time efficiently
GS9. maintain hygiene and sanitization to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	**1**	**1**	**-**	**-**
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
Constitutional values – Citizenship	**1**	**1**	**-**	**-**
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	**2**	**4**	**-**	**-**
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
Basic English Skills	**2**	**3**	**-**	**-**
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
Career Development & Goal Setting	**1**	**2**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
Communication Skills	**2**	**2**	**-**	**-**
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
Diversity & Inclusion	**1**	**2**	**-**	**-**
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
Financial and Legal Literacy	**2**	**3**	**-**	**-**
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
Essential Digital Skills	**3**	**4**	**-**	**-**
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Entrepreneurship	**2**	**3**	**-**	**-**
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
Customer Service	**1**	**2**	**-**	**-**
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	**2**	**3**	**-**	**-**
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	**20**	**30**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	18/11/2025
Next Review Date	18/11/2028
NSQC Clearance Date	18/11/2025

SGJ/N0611: Study electro-mechanical system of Small hydro plant and its O&M

Description

This unit is about the detailed operation and maintenance of the electro-mechanical system of a Small Hydro Power plant

Scope

The scope covers the following :

- Operate & Maintain the Electro-Mechanical System in a Small Hydro Plant

Elements and Performance Criteria

Operate the Electro-Mechanical System in a Small Hydro Plant

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

PC1. Explain basic concepts of electricity and prevalent energy-efficient devices typically used in a small hydro plant.

PC2. Identify the various types of turbines, switchyards and drive systems, their components (such as runner, casing nozzle/guide vanes, belts and pulleys etc.) along with their usage.

PC3. Explain the functioning of governors, oil pumping unit (OPU) and hydroelectric generator (Induction and Synchronous).

PC4. Describe the operating and maintenance procedure of a heating, ventilation and air conditioning (HVAC), automatic voltage regulator (AVR), power transformers and excitation systems.

PC5. Elaborate the use of compressors, compressed air system, cooling water system, unit control switchboard configurations and control circuitry configurations.

PC6. Illustrate how to work as per the layout of the workstation and the electrical and thermal equipment used at site

PC7. Explain the applications of unit auxiliary transformers, AC supply and distribution boards.

PC8. Elaborate the typical operation and functioning of LV switchgear (with respect to their ratings and testing procedures), illumination, battery chargers, DC distribution boards, inverters, UPS, DG sets and HVAC loads at SHP stations.

PC9. Describe typical motors used in pumps and electrical cranes.

PC10. Explain the use of power cables and communication channels and their typical earth faults (such as overheating) and defects along with their rectification.

PC11. Demonstrate the steps for drainage and dewatering of pumps.

PC12. Show how to use equipment handling devices such as crane, pulley block etc. along with their dismantling and assembling.

PC13. Employ standard operating techniques to maintain and inspect hydroelectric generators at site such as drying out and testing generators before commissioning.

PC14. Perform routine testing of the control system at site.

PC15. Demonstrate how to test various meters, instruments, devices, scanners, transducers, switchboards etc.

PC16. Show how to repair instrument, meters and other electrical devices.

PC17. Employ various approved procedures for waste management such as minimizing waste.

PC18. Demonstrate how to optimise utilization of material and water and applying common practices for conserving electricity and other resources.

PC19. Perform various factory and field tests on power transformers.

PC20. Demonstrate how to dry out and test unit auxiliary transformers at site.

PC21. Employ standard/prescribed techniques for installation, maintenance and testing of batteries at SHP stations.

Maintain the Electro-Mechanical System

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

PC22. Explain various faults and abnormalities in the system such as vibrations and unexpected noises.

PC23. Describe the causes of overheating and its prevention.

PC24. Elaborate usage and functioning of tapered locking sleeves and tapered adapter sleeves.

PC25. Differentiate between different types of bearings, their fittings and shaft alignment.

PC26. Discuss the application of protection systems for SHP stations.

PC27. Explain the importance/relevance of grounding for switchyard equipment.

PC28. Elaborate the application of isolators and their typical configurations for small hydro plants.

PC29. Describe the usage of different types of circuit Breakers .

PC30. Explain the usage of bus-bars and test bus equipment for maintenance of the system at site.

PC31. Demonstrate how to dismantle and assemble equipment.

PC32. Employ standard techniques to identify and rectify defects in the system.

PC33. Show how to diagnose fault conditions in equipment.

PC34. Perform steps to configure and maintain lightning protection for SHP station.

PC35. Demonstrate how to use load break switches, power fuses and circuit switchers to avoid breakdown of the system.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. basic knowledge of hydro turbine, Governor, OPU, hydro generator, AVR & excitation system

KU2. basic knowledge about types of transformers and switchyards

KU3. layout of the workstation & electrical and thermal equipment used

KU4. organizations' procedures for minimizing waste

KU5. efficient and inefficient utilization of material and water

KU6. ways of efficiently managing material and water in the process

KU7. basics of electricity and prevalent energy efficient devices

KU8. common practices of conserving electricity

Generic Skills (GS)

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

GS1. record operating parameters
GS2. record data on waste disposal at workplace
GS3. complete statutory documents relevant to safety and hygiene
GS4. communicate with colleagues on the significance of greening of jobs
GS5. make timely decisions for efficient utilization of resources
GS6. complete tasks efficiently and accurately within stipulated time
GS7. work with supervisors/team members to carry out work related tasks

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Operate the Electro-Mechanical System in a Small Hydro Plant	**25**	**33**	**-**	**-**
PC1. Explain basic concepts of electricity and prevalent energy-efficient devices typically used in a small hydro plant.	2	-	-	-
PC2. Identify the various types of turbines, switchyards and drive systems, their components (such as runner, casing nozzle/guide vanes, belts and pulleys etc.) along with their usage.	2	-	-	-
PC3. Explain the functioning of governors, oil pumping unit (OPU) and hydroelectric generator (Induction and Synchronous).	2	-	-	-
PC4. Describe the operating and maintenance procedure of a heating, ventilation and air conditioning (HVAC), automatic voltage regulator (AVR), power transformers and excitation systems.	2	-	-	-
PC5. Elaborate the use of compressors, compressed air system, cooling water system, unit control switchboard configurations and control circuitry configurations.	3	-	-	-
PC6. Illustrate how to work as per the layout of the workstation and the electrical and thermal equipment used at site	2	-	-	-
PC7. Explain the applications of unit auxiliary transformers, AC supply and distribution boards.	3	-	-	-
PC8. Elaborate the typical operation and functioning of LV switchgear (with respect to their ratings and testing procedures), illumination, battery chargers, DC distribution boards, inverters, UPS, DG sets and HVAC loads at SHP stations.	3	-	-	-
PC9. Describe typical motors used in pumps and electrical cranes.	3	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. Explain the use of power cables and communication channels and their typical earth faults (such as overheating) and defects along with their rectification.	3	-	-	-
PC11. Demonstrate the steps for drainage and dewatering of pumps.	-	3	-	-
PC12. Show how to use equipment handling devices such as crane, pulley block etc. along with their dismantling and assembling.	-	3	-	-
PC13. Employ standard operating techniques to maintain and inspect hydroelectric generators at site such as drying out and testing generators before commissioning.	-	3	-	-
PC14. Perform routine testing of the control system at site.	-	3	-	-
PC15. Demonstrate how to test various meters, instruments, devices, scanners, transducers, switchboards etc.	-	3	-	-
PC16. Show how to repair instrument, meters and other electrical devices.	-	3	-	-
PC17. Employ various approved procedures for waste management such as minimizing waste.	-	3	-	-
PC18. Demonstrate how to optimise utilization of material and water and applying common practices for conserving electricity and other resources.	-	3	-	-
PC19. Perform various factory and field tests on power transformers.	-	3	-	-
PC20. Demonstrate how to dry out and test unit auxiliary transformers at site.	-	3	-	-
PC21. Employ standard/prescribed techniques for installation, maintenance and testing of batteries at SHP stations.	-	3	-	-
Maintain the Electro-Mechanical System	**25**	**17**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC22. Explain various faults and abnormalities in the system such as vibrations and unexpected noises.	2	-	-	-
PC23. Describe the causes of overheating and its prevention.	2	-	-	-
PC24. Elaborate usage and functioning of tapered locking sleeves and tapered adapter sleeves.	3	-	-	-
PC25. Differentiate between different types of bearings, their fittings and shaft alignment.	3	-	-	-
PC26. Discuss the application of protection systems for SHP stations.	3	-	-	-
PC27. Explain the importance/relevance of grounding for switchyard equipment.	3	-	-	-
PC28. Elaborate the application of isolators and their typical configurations for small hydro plants.	3	-	-	-
PC29. Describe the usage of different types of circuit Breakers .	3	-	-	-
PC30. Explain the usage of bus-bars and test bus equipment for maintenance of the system at site.	3	-	-	-
PC31. Demonstrate how to dismantle and assemble equipment.	-	2	-	-
PC32. Employ standard techniques to identify and rectify defects in the system.	-	3	-	-
PC33. Show how to diagnose fault conditions in equipment.	-	3	-	-
PC34. Perform steps to configure and maintain lightning protection for SHP station.	-	3	-	-
PC35. Demonstrate how to use load break switches, power fuses and circuit switchers to avoid breakdown of the system.	-	6	-	-
NOS Total	**50**	**50**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N0611
NOS Name	Study electro-mechanical system of Small hydro plant and its O&M
Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Operation and Maintenance
NSQF Level	4
Credits	5
Version	2.0
Last Reviewed Date	18/02/2025
Next Review Date	17/02/2028
NSQC Clearance Date	18/02/2025

SGJ/N0612: Study Hydro-mechanical and Civil system of Small hydro plant and its O&M

Description

This unit is about detailed operation and maintenance of Hydro-mechanical and civil system of Small Hydro Power plant

Scope

The scope covers the following :

- Operate & Maintain the Hydro-mechanical and Civil Systems in a Small Hydro Plant

Elements and Performance Criteria

Operate the Hydro-mechanical and Civil Systems in a Small Hydro Plant

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

PC1. Discuss basic mechanical concepts used in hydro-mechanical systems of a hydro plant

PC2. Differentiate between various types of civil layout and maps.

PC3. Explain the use of a penstock along with its related special parts/equipment (such as air vent, matching flanges, bulkhead, piezo metric connections etc.)

PC4. Describe functioning of a trash rake, gates, hoisting arrangements and valves as per their application in a small hydro-plant.

PC5. Elaborate the application of a heating, ventilation and Air conditioning (HVAC) system.

PC6. Describe the use of discuss compressors, compressed air system, cooling water system.

PC7. Explain the application of channel/pipe/tunnel, desilting tank, forebay and surge tanks, anchor block and saddles, branching and tail race channel.

PC8. Explain the economic value of defects/leakage and its effect on plant's operational costs.

PC9. Demonstrate how to drain and dewater pumps of hydro-mechanical and civil systems.

PC10. Show how to use equipment handling devices such as crane, pulley block etc. along with their dismantling and assembling.

PC11. Perform the steps to measure discharge and sediments in the systems.

PC12. Employ various approved procedures for resource conservation and waste management.

Maintain the Hydro-mechanical and Civil Systems

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

PC13. Explain various faults and abnormalities in the mechanical system such as vibrations and unexpected noises.

PC14. Describe the causes of overheating of host motors and its prevention.

PC15. Elaborate usage and functioning of tapered locking sleeves and tapered adapter sleeves.

PC16. Differentiate between different types of bearings, their fittings and shaft alignment.

PC17. Identify different methods for performing SHP plant construction.

PC18. Demonstrate how to dismantle and assemble hydro-mechanical equipment.

PC19. Employ standard techniques to identify and rectify defects in the system.
PC20. Show how to use construction material during maintenance of the system.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. basic knowledge about mechanics
KU2. ways of efficiently managing material and water in the process
KU3. economic value of defects/leakage
KU4. basic knowledge about types of civil layout and maps
KU5. layout of the workstation and electrical and thermal equipment used
KU6. organizations' procedures for minimizing waste
KU7. efficient and inefficient utilization of material and water

Generic Skills (GS)

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

GS1. record data on waste disposal at workplace
GS2. complete statutory documents relevant to safety and hygiene
GS3. read Standard Operating Practices (SOP) documents
GS4. communicate with colleagues on the significance of greening of jobs
GS5. make timely decisions for efficient utilization of resources
GS6. complete tasks efficiently and accurately within stipulated time
GS7. work with supervisors/team members to carry out work related tasks
GS8. identify cause and effect of greening of jobs

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Operate the Hydro-mechanical and Civil Systems in a Small Hydro Plant	**19**	**12**	**-**	**-**
PC1. Discuss basic mechanical concepts used in hydro-mechanical systems of a hydro plant	2	-	-	-
PC2. Differentiate between various types of civil layout and maps.	2	-	-	-
PC3. Explain the use of a penstock along with its related special parts/equipment (such as air vent, matching flanges, bulkhead, piezo metric connections etc.)	2	-	-	-
PC4. Describe functioning of a trash rake, gates, hoisting arrangements and valves as per their application in a small hydro-plant.	2	-	-	-
PC5. Elaborate the application of a heating, ventilation and Air conditioning (HVAC) system.	2	-	-	-
PC6. Describe the use of discuss compressors, compressed air system, cooling water system.	3	-	-	-
PC7. Explain the application of channel/pipe/tunnel, desilting tank, forebay and surge tanks, anchor block and saddles, branching and tail race channel.	3	-	-	-
PC8. Explain the economic value of defects/leakage and its effect on plant's operational costs.	3	-	-	-
PC9. Demonstrate how to drain and dewater pumps of hydro-mechanical and civil systems.	-	3	-	-
PC10. Show how to use equipment handling devices such as crane, pulley block etc. along with their dismantling and assembling.	-	3	-	-
PC11. Perform the steps to measure discharge and sediments in the systems.	-	3	-	-
PC12. Employ various approved procedures for resource conservation and waste management.	-	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Maintain the Hydro-mechanical and Civil Systems	**10**	**9**	**-**	**-**
PC13. Explain various faults and abnormalities in the mechanical system such as vibrations and unexpected noises.	2	-	-	-
PC14. Describe the causes of overheating of host motors and its prevention.	2	-	-	-
PC15. Elaborate usage and functioning of tapered locking sleeves and tapered adapter sleeves.	2	-	-	-
PC16. Differentiate between different types of bearings, their fittings and shaft alignment.	2	-	-	-
PC17. Identify different methods for performing SHP plant construction.	2	-	-	-
PC18. Demonstrate how to dismantle and assemble hydro-mechanical equipment.	-	3	-	-
PC19. Employ standard techniques to identify and rectify defects in the system.	-	3	-	-
PC20. Show how to use construction material during maintenance of the system.	-	3	-	-
NOS Total	**29**	**21**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N0612
NOS Name	Study Hydro-mechanical and Civil system of Small hydro plant and its O&M
Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Operation and Maintenance
NSQF Level	4
Credits	5
Version	2.0
Last Reviewed Date	18/02/2025
Next Review Date	17/02/2028
NSQC Clearance Date	18/02/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification 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 assessment, every trainee should score the Recommended Pass % aggregate for the Qualification.

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification.

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
SGJ/N1205.Study components and layout of Small Hydro Power (SHP) Plant	30	20	-	-	50	15
SGJ/N0701.Inspect different components of Small Hydro Power (SHP) Plant	20	30	-	-	50	15
SGJ/N0610.Start and shut Small Hydro Power (SHP) Plant	26	24	-	-	50	15
SGJ/N0106.Maintain Personal Health & Safety at project site	21	29	-	-	50	15
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	15
Total	**117**	**133**	**-**	**-**	**250**	**75**

Elective: 1 Electro-mechanical system

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
SGJ/N0611.Study electro-mechanical system of Small hydro plant and its O&M	50	50	0	0	100	25
Total	**50**	**50**	**-**	**-**	**100**	**25**

Elective: 2 Hydro-mechanical and Civil system

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
SGJ/N0612.Study Hydro-mechanical and Civil system of Small hydro plant and its O&M	29	21	0	0	50	25
Total	**29**	**21**	**-**	**-**	**50**	**25**

Acronyms

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.