

# QUALIFICATION PACK – OCCUPATIONAL STANDARD FOR INFRASTRUCTURE EQUIPMENT INDUSTRY



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## What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

## Introduction

### Qualification Pack - Junior Mechanic (Electrical/ Electronics/Instrumentation)

<b>SECTOR:</b>	INFRASTRUCTURE EQUIPMENT
<b>SUB SECTOR:</b>	Equipment service and spares
<b>OCCUPATION:</b>	Equipment Maintenance
<b>REFERENCE ID:</b>	IES/Q1106
<b>ALIGNED TO:</b>	NCO-2004/ NIL

**Brief Job Description:** The primary role of a Junior Mechanic (Electrical/Electronics/Instrumentation) is to assist in repair and maintenance for electrical / electronic assemblies and sub-assemblies to ensure equipment's optimum functioning.

**Personal Attributes:** This job requires the individual to work independently as well as in teams. He Should have analytical skills, problem solving attitude, high concentration levels. Junior Mechanic (Electrical/Electronics/Instrumentation) should have good hand-eye coordination, good eye-sight, no colour-blindness and should be able to complete precise and detailed work.

**Qualification Pack For  
Junior Mechanic (Electrical/Electronics/Instrumentation)**

Job Details

<b>Qualifications Pack Code</b>	<b>IES/Q1106</b>		
<b>Job Role</b>	<b>Junior Mechanic (Electrical/ Electronics/Instrumentation)</b>		
<b>Credits(NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Sector</b>	<b>Infrastructure Equipment</b>	<b>Drafted on</b>	<b>16/02/15</b>
<b>Sub-sector</b>	<b>Equipment service and spares</b>	<b>Last reviewed on</b>	<b>31/03/15</b>
<b>Occupation</b>	<b>Equipment Maintenance</b>	<b>Next review date</b>	<b>31/03/17</b>
<b>NSQC clearance on</b>	<b>31/03/15</b>		

<b>Job Role</b>	<b>Junior Mechanic (Electrical/ Electronics/Instrumentation)</b>
<b>Role Description</b>	The primary role of a Junior Mechanic (Electrical/Electronics/Instrumentation) is to assist in repair and maintenance for electrical / electronic assemblies and sub-assemblies to ensure equipment's optimum functioning.
<b>NSQF level</b>	3
<b>Minimum Educational Qualifications*</b>	Preferably Class VIII
<b>Maximum Educational Qualifications*</b>	NA
<b>Training</b> (Suggested but not mandatory)	NA
<b>Minimum Job Entry Age</b>	Preferably 18 years
<b>Experience</b>	NA
<b>Applicable National Occupational Standards (NOS)</b>	<p><b>Compulsory</b></p> <ol style="list-style-type: none"> <li>1. <a href="#">IES/N1106 Assist in repair and maintenance of infrastructure equipment's electrical/electronic/instrumentation parts</a></li> <li>2. <a href="#">IES/N7801 Maintain the work area, tools and machine to support the operations</a></li> <li>3. <a href="#">IES/N7602 Comply with workshop health and safety guidelines</a></li> </ol> <p><b>Optional:</b> N.A.</p>
<b>Performance Criteria</b>	As described in the relevant OS units

**Qualification Pack For  
Junior Mechanic (Electrical/Electronics/Instrumentation)**

**Definition**

Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar businesses 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.
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry.
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Sub-functions	Sub-functions are sub-activities essential to fulfil achieving the objectives of the function.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
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; he/she needs to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance Criteria 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 Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Qualifications Pack(QP)	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification 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 find the required one.
Scope	Scope is the 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 the quality of required performance.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform up to the required standard.

**Qualification Pack For  
Junior Mechanic (Electrical/Electronics/Instrumentation)**

**Acronyms**

Keywords /Terms	Description
OS	Occupational Standard(s)
NOS	National Occupational Standard(s)
QP	Qualifications Pack
NSQF	National Skill Qualifications Framework
ITI	Industrial Training Institute
HCV	Heavy Commercial Vehicle
SHE	Safety Health and Environment
SOP	Standard Operating Procedure
TBD	To Be Determined

**Assist in repair and maintenance of infrastructure equipment's  
electrical/electronic/ instrumentation parts**

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# National Occupational Standard



## Overview

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that need to be assisting for testing, diagnosing, repairing and maintaining Electrical & Electronic components of the infrastructure equipment

## Assist in repair and maintenance of infrastructure equipment's electrical/electronic/ instrumentation parts

<b>Unit Code</b>	<b>IES/N1106</b>
<b>Unit Title (Task)</b>	<b>Assist in repair and maintenance of infrastructure equipment's electrical/electronic/ instrumentation parts</b>
<b>Description</b>	This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that need to be assisting for testing, diagnosing, repairing and maintaining Electrical & Electronic components of the infrastructure equipment
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>• Breakdown Repair Assistance</li> <li>• Maintenance Work Assistance</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Breakdown repair Assistance</b>	To be competent, the user/individual on the job must be able to: <p>PC1. Assist in Inspecting and testing electrical systems and equipment as per mechanic's instructions</p> <p>PC2. Assist in Visual inspections as per mechanic's instruction</p> <p>PC3. Ensure availability of tools, spare parts, equipment and supplies for repair work</p> <p>PC4. Assist in Installing new fuses, electrical cables, or power sources as required as per manufacturer's manual</p> <p>PC5. Locate circuit defects such as blown fuses or malfunctioning transistors as per manufacturer's manual</p> <p>PC6. Remove or repair circuit defects such as blown fuses or malfunctioning transistors as per manufacturer's manual</p> <p>PC7. Assist to repair or replace defective wiring and relays in ignition, lighting, air-conditioning, and safety control systems, using electrician's tools as per manufacturer's manual</p> <p>PC8. Assist in preparing parts list for procurement</p> <p>PC9. Handle and dispose waste based on environmental guidelines at the work place</p>
<b>Maintenance work Assistance</b>	<p>PC10. Follow the maintenance schedule as per manufacturer's manual</p> <p>PC11. Assist in replacing the scheduled spare parts as per mechanic's instruction</p> <p>PC12. Replenish / change the consumables as per service manual</p> <p>PC13. Perform visual inspection to verify proper functioning of electronic/electrical components as per manufacturer's manual</p> <p>PC14. Check the Control Panel for warning as per manufacturer's manual</p> <p>PC15. Ensure cleaning of electronic components as per manufacturer's manual</p>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b> (Knowledge of the company / organization and	The user/individual on the job needs to know and understand: <p>KA1. The organization's procedures and guidelines related to Breakdown &amp; Maintenance services</p> <p>KA2. The performance standards &amp; procedures followed in the company</p> <p>KA3. Reporting structure in the company</p>

## Assist in repair and maintenance of infrastructure equipment's electrical/electronic/ instrumentation parts

its processes)	<p>KA4. Escalation matrix for reporting unresolved problems</p> <p>KA5. Timeframe in which the complaint/problem should be resolved</p> <p>KA6. Work target and review mechanism with supervisor for obtaining/ giving feedback related to performance process</p> <p>KA7. Location of tools</p> <p>KA8. Contact person in case of queries on procedure or products</p> <p>KA9. Location and process for storage and disposal of waste material</p> <p>KA10. Safety Policy of the company</p>
<b>B. Technical Knowledge</b>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. The manufacturer's specification of the Electrical/Electronics/Instrumentation parts in use</p> <p>KB2. Various components of Electrical/Electronics/Instrumentation systems</p> <p>KB3. Common symbols used in Electrical/Electronics/Instrumentation circuit diagrams</p> <p>KB4. Techniques to read and interpret Electrical/Electronics/Instrumentation circuit diagrams</p> <p>KB5. Techniques used to diagnose the faults through visual inspection</p> <p>KB6. Methods to maintain and correctly and safely charge different battery types</p> <p>KB7. The specification and grades of lubricants</p> <p>KB8. The method to identify which lubricant to use in which equipment</p> <p>KB9. Usage of safety devices, e.g. circuit protection, fuses, safety switches</p> <p>KB10. Usage of the control panel</p> <p>KB11. Methods to remove components from Electrical/Electronic system without damage to the components or surrounding structure</p> <p>KB12. Usage of a range of hand tools</p> <p>KB13. Techniques to check that the tools and equipment to be used are correctly calibrated, and are in a safe, tested and serviceable condition</p> <p>KB14. Methods to check that the tools and equipment to be used are correctly calibrated, and are in a safe, tested and serviceable condition</p> <p>KB15. Method to use all tools correctly, check and store after use</p> <p>KB16. Methods to lay the removed components out in a logical sequence to aid re-assembly</p> <p>KB17. The expected outcomes of the tests being conducted</p> <p>KB18. Techniques to Clean/service different electrical/electronic/instrumentation parts</p> <p>KB19. The hazards associated with diagnosing and rectifying electrical/electronic/instrumentation faults</p> <p>KB20. Usage of tools and equipment to minimize &amp; reduce any risk</p>
<b>Skills (S)</b>	
<b>A. Core Skills / Generic Skills</b>	<p><b>Writing Skills</b></p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Write, as required, in English or vernacular language</p> <p>SA2. Record and document the basic details of repairs and maintenance performed on various aggregates/ components</p>

## Assist in repair and maintenance of infrastructure equipment's electrical/electronic/ instrumentation parts

	<b>Reading Skills</b>
	The user/ individual on the job needs to know and understand how to: SA3. Read work orders, specifications etc. related to the job role SA4. Read the maintenance manual for understanding basic specifications of the equipment/ process to be undertaken SA5. Refer to operator and maintenance manuals to support work tasks
	<b>Oral Communication (Listening and Speaking Skills)</b>
	The user/ individual on the job needs to know and understand how to: SA6. Interact with the mechanic/ supervisors, as required, to seek clarifications and understand issues
<b>B. Professional Skills</b>	<b>Decision Making</b>
	The user/ individual on the job needs to know and understand how to: SB1. Evaluate the situation to decide on seeking assistance from manager/ peers
	<b>Plan and Organize</b>
	The user/ individual on the job needs to know and understand how to: SB2. Plan, prioritize and sequence work operations as per required schedule and location SB3. Organize and analyze information relevant to work
	<b>Customer Centricity</b>
	The user/ individual on the job needs to know and understand how to: SB4. Provide service of the highest order to ensure customer satisfaction
	<b>Problem Solving</b>
	The user/ individual on the job needs to know and understand how to: SB5. Assist in repair and maintenance of equipment under the supervision of the mechanic SB6. Bring any noticeable issue in the component/sub assemblies currently working on or otherwise to the attention of the mechanic
	<b>Analytical Thinking</b>
	The user/ individual on the job needs to know and understand how to: SB7. Evaluate the complexity of the tasks to determine if any assistance required from manager/ peers
<b>Critical Thinking</b>	
The user/ individual on the job needs to know and understand how to: SB8. Analyse, evaluate and apply the information gathered from observation, experience, reasoning to act efficiently and effectively	



## Assist in repair and maintenance of infrastructure equipment's electrical/electronic/ instrumentation parts

### NOS Version Control

<b>NOS Code</b>	<b>IES/N1106</b>		
<b>Credits(NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Sector</b>	<b>Infrastructure Equipment</b>	<b>Drafted on</b>	<b>16/02/15</b>
<b>Industry Sub-sector</b>	<b>Equipment service and spares</b>	<b>Last reviewed on</b>	<b>31/03/15</b>
<b>Occupation</b>	<b>Equipment Maintenance</b>	<b>Next review date</b>	<b>31/03/15</b>

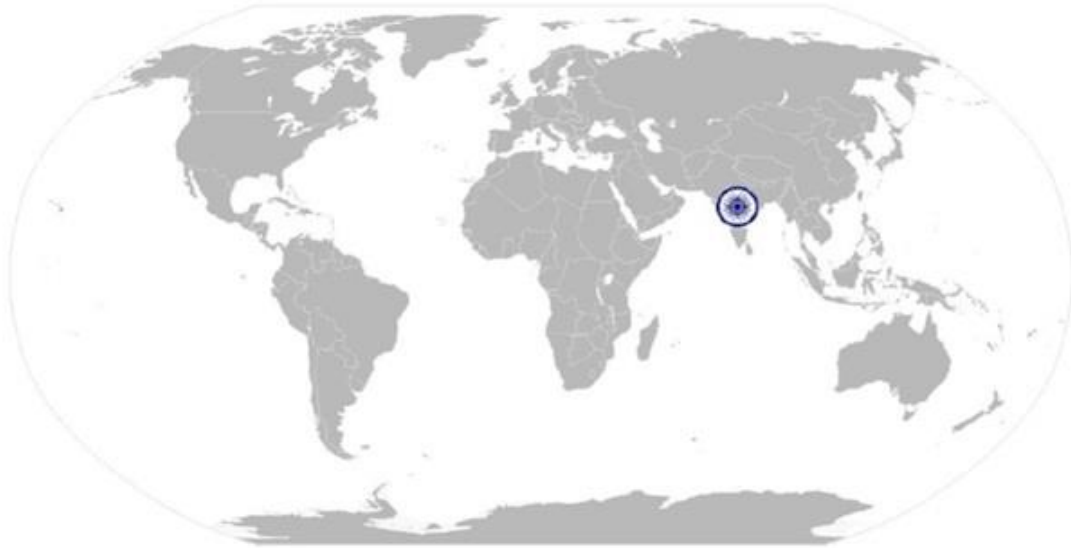
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**Maintain the work area, tools and machine to support the operations**

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# National Occupational Standard



## Overview

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are needed to Maintain the work area, tools and machine to support the operations

## Maintain the work area, tools and machine to support the operations

<b>Unit Code</b>	IES/N7801
<b>Unit Title (Task)</b>	Maintain the work area, tools and machine to support the operations
<b>Description</b>	This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for activities that are needed to Maintain the work area, tools and machine to support the operations
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>Work area / tools / machinery maintenance at work</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Work area / tools / machinery maintenance at work</b>	To be competent, the user/individual on the job must be able to: <p>PC1. Ensure safe handling of materials, machinery, equipment and tools</p> <p>PC2. Assist in carrying out checks to ensure the environmental conditions required are met</p> <p>PC3. Follow correct lifting and handling procedures</p> <p>PC4. Follow instructions with regard to materials to minimize waste</p> <p>PC5. Ensure a clean and hazard free working area</p> <p>PC6. Maintain tools and equipment as per organization guidelines and manufacturer's instructions</p> <p>PC7. Report the need for maintenance and/or cleaning outside your area of responsibility</p> <p>PC8. Report unsafe equipment and other dangerous occurrences</p> <p>PC9. Ensure good condition of the appropriate machine guards for equipment</p> <p>PC10. Ensure use of appropriate cleaning equipment and methods appropriate for the work to be carried out</p> <p>PC11. Carry out cleaning according to schedules and limits of responsibility</p> <p>PC12. Ensure safe disposal of waste</p>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: <p>KA1. The organization's procedures and guidelines related to Breakdown &amp; Maintenance services</p> <p>KA2. The performance standards &amp; procedures followed in the company</p> <p>KA3. Reporting structure in the company</p> <p>KA4. Escalation matrix for reporting unresolved problems</p> <p>KA5. Timeframe in which the complaint/problem should be resolved</p> <p>KA6. Work target and review mechanism with supervisor for obtaining/giving feedback related to performance process</p> <p>KA7. Location of tools</p> <p>KA8. Contact person in case of queries on procedure or products</p> <p>KA9. Location and process for storage and disposal of waste material</p> <p>KA10. Safety Policy of the company</p>
<b>B. Technical Knowledge</b>	The user/individual on the job needs to know and understand: <p>KB1. Work instructions and specifications and interpret them accurately</p> <p>KB2. Lifting and handling procedures</p>

## Maintain the work area, tools and machine to support the operations

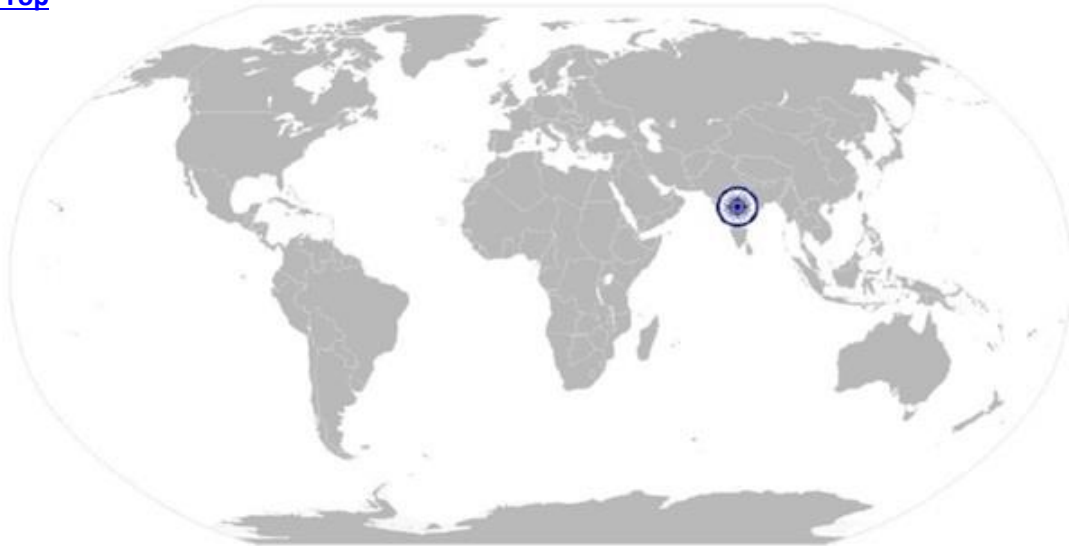
	<p>KB3. The importance of taking action when problems are identified</p> <p>KB4. Different ways of minimizing waste</p> <p>KB5. Different types of machine guards for equipment</p> <p>KB6. The importance of running maintenance and regular cleaning</p> <p>KB7. Effects of contamination on products i.e. machine oil, dirt</p> <p>KB8. Maintenance procedures and manufacturer's instructions</p> <p>KB9. Different types of cleaning equipment/ substances and their use</p>
<b>Skills (S)</b>	
<b>A. Core Skills / Generic Skills</b>	<b>Writing Skills</b>
	The user/ individual on the job needs to know and understand how to: SA1. Write, as required, in English or vernacular language
	<b>Reading Skills</b>
	The user/ individual on the job needs to know and understand how to: SA2. Read instructions, guidelines/procedures/rules
	<b>Oral Communication (Listening and Speaking Skills)</b>
The user/ individual on the job needs to know and understand how to: SA3. Interact with the mechanic/ supervisors, as required, to seek clarifications and understand issues	
<b>B. Professional Skills</b>	<b>Decision Making</b>
	The user/ individual on the job needs to know and understand how to: SB1. Evaluate the situation to decide on seeking assistance from superiors/peers
	<b>Plan and Organize</b>
	The user/ individual on the job needs to know and understand how to: SB2. Organize and analyze information relevant to work SB3. Plan and organize work area, tools, equipment and materials to minimise any risk for health and safety related incident/accident
	<b>Customer Centricity</b>
	The user/ individual on the job needs to know and understand how to: SB4. Ensure that the service provided is of the highest order to ensure customer satisfaction
	<b>Problem Solving</b>
	The user/ individual on the job needs to know and understand how to: SB5. Seek appropriate assistance from other sources to resolve problems
	<b>Analytical Thinking</b>
	The user/ individual on the job needs to know and understand how to: SB6. Identify cause and effect relations in their area of work
<b>Critical Thinking</b>	
The user/ individual on the job needs to know and understand how to: SB7. Apply balanced judgment to different situations	

**Maintain the work area, tools and machine to support the operations**

## **NOS Version Control**

<b>NOS Code</b>	<b>IES/N7801</b>		
<b>Credits(NSQF)</b>	<b>TBD</b>	<b>Version number</b>	<b>1.0</b>
<b>Sector</b>	<b>Infrastructure Equipment</b>	<b>Drafted on</b>	<b>16/02/15</b>
<b>Industry Sub-sector</b>	<b>Equipment service and spares</b>	<b>Last reviewed on</b>	<b>31/03/15</b>
<b>Occupation</b>	<b>Equipment Maintenance</b>	<b>Next review date</b>	<b>31/03/15</b>

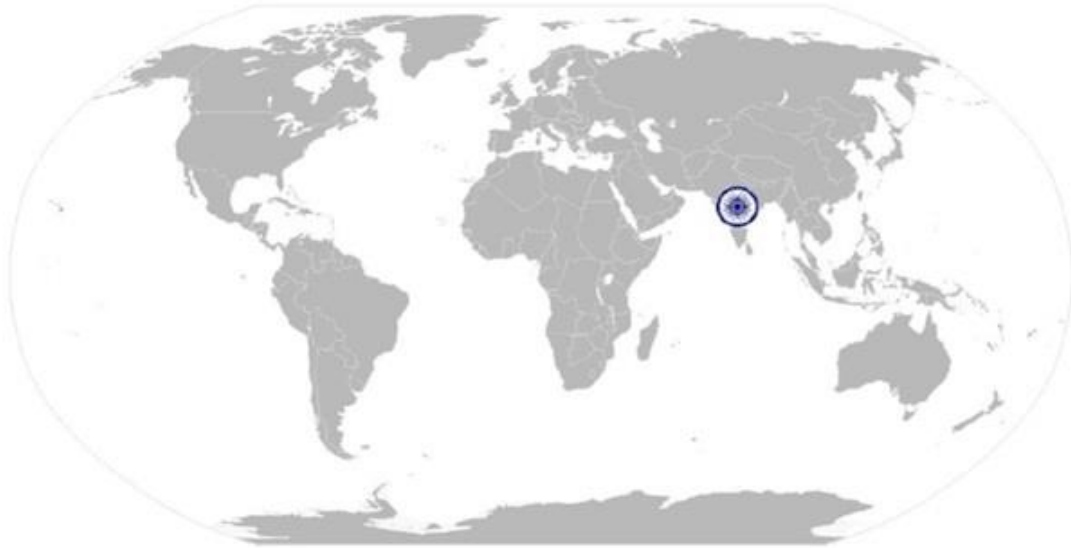
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Comply with workshop health and safety guidelines

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# National Occupational Standard



## Overview

This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for adhering to health and safety requirements at the service workshop during equipment maintenance.

## Comply with workshop health and safety guidelines

<b>Unit Code</b>	IES/N7602
<b>Unit Title (Task)</b>	Comply with workshop health and safety guidelines
<b>Description</b>	This unit provides Performance Criteria, Knowledge & Understanding and Skills & Ability for adhering to health and safety requirements at the service workshop during equipment maintenance.
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>Service workshop health and safety</li> </ul>
<b>Performance Criteria(PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Service workshop health and safety</b>	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Comply with safety, health, security and environment related regulations/ guidelines as per organizational/ manufacturer’s policy</p> <p>PC2. Carry out maintenance operations as per the manufacturer’s and workshop related health and safety guidelines/ standard operating procedures</p> <p>PC3. Follow safety regulations and procedures with regard to service workshop hazards and risks</p> <p>PC4. Use appropriate protective clothing/ equipment for specific tasks and work conditions as per service manual</p> <p>PC5. Lift and carry tools/equipment/components safely using correct procedure as per the service manual</p> <p>PC6. Use appropriate tools in a proper manner as given in the service manual</p> <p>PC7. Keep the work area free from clutter and spillage</p> <p>PC8. Store equipment and tools back at designated place post use and inspect to make sure they are not left behind</p> <p>PC9. Handle the storage and disposal of hazardous materials and waste in compliance with health, safety and environmental guidelines</p> <p>PC10. Operate various grades of fire extinguishers, as applicable</p> <p>PC11. Support in administering basic first aid and report to concerned team members, as required, in case of an accident</p> <p>PC12. Respond promptly and appropriately to an accident/ incident or emergency situation, within limits of your role and responsibility</p> <p>PC13. Record and report details related to operations, incidents or accidents, as applicable</p>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Health, safety, environmental(HSE) and security related policies/ guidelines of the organization</p> <p>KA2. The importance of complying with health, safety, environmental and security guidelines during workshop operations</p> <p>KA3. Contact details of personnel responsible for Health, Safety and environment (SHE) related matters</p> <p>KA4. Location of workshop store, first aid station and safe assembly points</p> <p>KA5. Concerned personnel to reach out in case of emergencies and</p>

## Comply with workshop health and safety guidelines

	accidents/ incidents KA6. Reporting and documentation procedures for HSE and security matters
<b>B. Technical Knowledge</b>	The user/individual on the job needs to know and understand: KB1. Manufacturer’s guidelines related to health and safety requirements KB2. Common types of health, safety, environment and security risks related to maintenance operations KB3. Types, use and importance of Personal Protective Equipment (PPE) and other safety clothing KB4. Safe working practices to avoid common hazards and risks KB5. Safe working practices when working with tools and machines KB6. Safe working practices while working in different processes/ confined spaces KB7. Various dangers associated with the use of electrical equipment KB8. Various types of safety signs/ warnings and their meaning KB9. Guidelines for transport, storage and disposal of hazardous materials and waste KB10. Types of common hazards and risks at the workshop including fire, electrical, equipment related KB11. Knowledge of safe lockdown/ stop of machinery use in case of emergencies and incidents/ accidents KB12. Types of fire extinguishers and their use KB13. Common injuries and appropriate basic first aid treatment eg. electrical shock, bleeding, wounds, fractures, minor burns, eye injuries
<b>Skills (S)</b>	
<b>A. Core Skills / Generic Skills</b>	<b>Writing Skills</b> The user/ individual on the job needs to know and understand how to: SA1. Document and report any health and safety related incidents/ accidents
	<b>Reading Skills</b> The user/ individual on the job needs to know and understand how to: SA2. Read all organizational and equipment related health and safety manuals and documents SA3. Read instructions, guidelines/procedures/rules
	<b>Oral Communication (Listening and Speaking Skills)</b> The user/ individual on the job needs to know and understand how to: SA4. Give clear instructions to coworkers, subordinates and others
	<b>B. Professional Skills</b>
	<b>Decision Making</b> The user/ individual on the job needs to know and understand how to: SB1. Make decisions on a suitable course of action or response in the event of any emergency, health and safety related incidents/accidents
	<b>Plan and Organize</b> The user/ individual on the job needs to know and understand how to: SB2. Plan and organize own work schedule, work area, tools, equipment and materials to minimise any risk for health and safety related incident/accident
	<b>Customer Centricity</b> The user/ individual on the job needs to know and understand how to:



## Comply with workshop health and safety guidelines

	SB3. Build and maintain positive and effective relationships with colleagues and customers
	<b>Problem Solving</b>
	The user/ individual on the job needs to know and understand how to: SB4. Identify immediate or temporary solutions to resolve delays SB5. Seek appropriate assistance from other sources to resolve problems
	<b>Analytical Thinking</b>
	The user/ individual on the job needs to know and understand how to: SB6. Identify 'cause and effect' relations in own area of work
	<b>Critical Thinking</b>
	The user/ individual on the job needs to know and understand how to: SB7. Apply balanced judgment to different situations

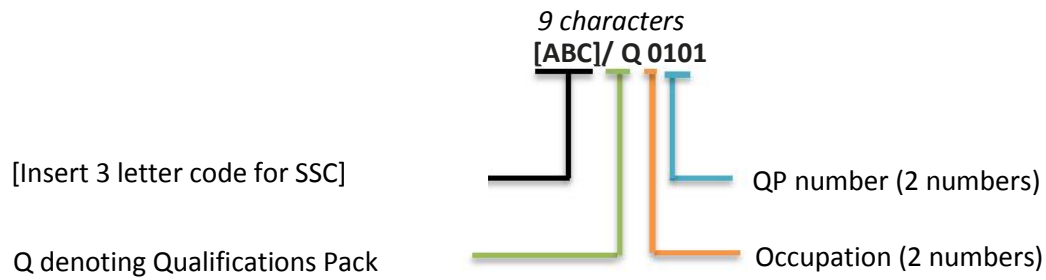
## NOS Version Control

NOS Code	IES/N7602		
Credits(NSQF)	TBD	Version number	1.0
Sector	Infrastructure Equipment	Drafted on	16/02/15
Industry Sub-sector	Equipment service and spares	Last reviewed on	31/03/15
Occupation	Equipment Maintenance	Next review date	31/03/15

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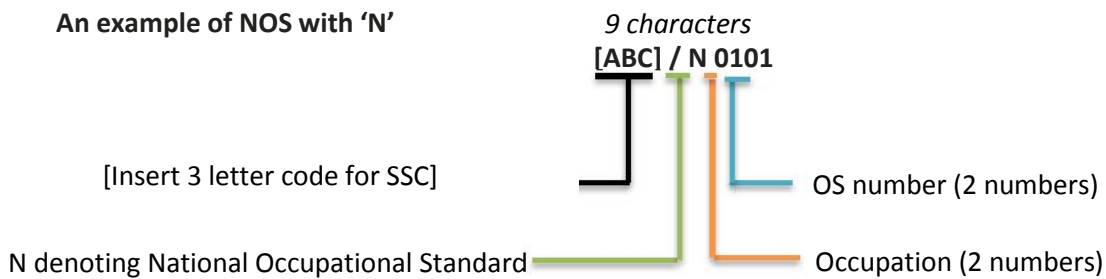
*Nomenclature for QP and NOS units*

### Qualifications Pack



### Occupational Standard

An example of NOS with 'N'



*Nomenclature for QP and NOS units*

The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
Equipment Operations	1 to 10
Equipment Service and spares	11 to 20
Equipment Production	21 to 40
Equipment Sales	41 to 50
Equipment Financing	51 to 55
Core Enablers	56 to 65
Other Enablers	66 to 75
Common Occupations	76 to 85

Sequence	Description	Example
Three letters	Industry name	IES
Slash	/	/
Next letter	Whether QP or NOS	N
Next two numbers	Occupation code	01
Next two numbers	OS number	01

### **CRITERIA FOR ASSESSMENT OF TRAINEES**

**Job Role** Junior Mechanic (Electrical/Electronics/Instrumentation)

**Qualification Pack** IES/Q1106

**Sector Skill Council** Infrastructure & Equipment

#### **Guidelines for Assessment**

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each 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 PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5. To pass the Qualification Pack, every trainee should score a minimum of 70% aggregate
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

NOS	Performance criteria	Total Mark	Out Of	Marks Allocation	
				Theory	Skills Practical
1. IES/N1106 Assist in repair and maintenance of infrastructure equipment's	PC1. Assist in Inspecting and testing electrical systems and equipment as per mechanic's instructions	<b>41</b>	4	1	3
	PC2. Assist in Visual inspections as per mechanic's instruction		3	0	3
	PC3. Ensure availability of tools, spare parts, equipment and supplies for repair work		2	1	1
	PC4. Assist in Installing new fuses, electrical cables, or power sources as required as per manufacturer's manual		4	1	3
	PC5. Locate circuit defects such as blown fuses or malfunctioning transistors as per manufacturer's manual		4	1	3

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	PC6. Remove or repair circuit defects such as blown fuses or malfunctioning transistors as per manufacturer's manual		4	1	3
	PC7. Assist to repair or replace defective wiring and relays in ignition, lighting, air-conditioning, and safety control systems, using electrician's tools as per manufacturer's manual		4	1	3
	PC8. Assist in preparing parts list for procurement		4	1	3
	PC9. Handle and dispose waste based on environmental guidelines at the work place		1	0	1
	PC10. Follow the maintenance schedule as per manufacturer's manual		1	0	1
	PC11. Assist in replacing the scheduled spare parts as per mechanic's instruction		2	1	1
	PC12. Replenish / change the consumables as per service manual		1	0	1
	PC13. Perform visual inspection to verify proper functioning of electronic/electrical components as per manufacturer's manual		1	0	1
	PC14. Check the Control Panel for warning as per manufacturer's manual		4	1	3
	PC15. Ensure cleaning of electronic components as per manufacturer's manual		2	1	1
		<b>Total</b>	<b>41</b>	<b>10</b>	<b>31</b>
2. IES/N7801 Maintain the work area, tools and machine to support the operations	PC1. Ensure safe handling of materials, machinery, equipment and tools	<b>27</b>	2	1	1
	PC2. Assist in carrying out checks to ensure the environmental conditions required are met		4	1	3
	PC3. Follow correct lifting and handling procedures		4	1	3
	PC4. Follow instructions with regard to materials to minimize waste		1	0	1
	PC5. Ensure a clean and hazard free working area		1	0	1

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	PC6. Maintain tools and equipment as per organization guidelines and manufacturer's instructions		3	1	2
	PC7. Report the need for maintenance and/or cleaning outside your area of responsibility		2	1	1
	PC8. Report unsafe equipment and other dangerous occurrences		1	0	1
	PC9. Ensure good condition of the appropriate machine guards for equipment		2	1	1
	PC10. Ensure use of appropriate cleaning equipment and methods appropriate for the work to be carried out		4	1	3
	PC11. Carry out cleaning according to schedules and limits of responsibility		2	1	1
	PC12. Ensure safe disposal of waste		1	0	1
		<b>Total</b>	<b>27</b>	<b>8</b>	<b>19</b>
3. IES/N7602 Comply with workshop health and safety guidelines	PC1. Comply with safety, health, security and environment related regulations/ guidelines as per organizational/ manufacturer's policy		2	1	1
	PC2. Carry out maintenance operations as per the manufacturer's and workshop related health and safety guidelines/ standard operating procedures		4	1	3
	PC3. Follow safety regulations and procedures with regard to service workshop hazards and risks	<b>27</b>	2	1	1
	PC4. Use appropriate protective clothing/ equipment for specific tasks and work conditions as per service manual		4	1	3
	PC5. Lift and carry tools/equipment/components safely using correct procedure as per the service manual		4	1	3
	PC6. Use appropriate tools in a proper manner as given in the service manual		4	1	3

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	PC7. Keep the work area free from clutter and spillage		1	0	1
	PC8. Store equipment and tools back at designated place post use and inspect to make sure they are not left behind		2	1	1
	PC9. Handle the storage and disposal of hazardous materials and waste in compliance with health, safety and environmental guidelines		1	0	1
	PC10. Operate various grades of fire extinguishers, as applicable		1	0	1
	PC11. Support in administering basic first aid and report to concerned team members, as required, in case of an accident		0	0	0
	PC12. Respond promptly and appropriately to an accident/ incident or emergency situation, within limits of your role and responsibility		1	0	1
	PC13. Record and report details related to operations, incidents or accidents, as applicable		1	0	1
		<b>Total</b>	<b>27</b>	<b>7</b>	<b>20</b>