

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR ELECTRONICS INDUSTRY

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

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Introduction

Qualifications Pack - Smartphone Assembly Technician

SECTOR/S: ELECTRONICS

SUB-SECTOR: Consumer Electronics & IT Hardware

OCCUPATION: Manufacturing

REFERENCE ID: ELE/Q3901

ALIGNED TO: NCO-2015/ NIL

Brief Job Description: A Smartphone assembly technician refers to assembly instructions, blueprint specifications, etc. to assemble or fix smartphone parts/components in correct position and alignment using approved techniques and equipment in a production unit.

Personal Attributes: Needs to be receptive to repetitive nature of work. Should possess an alert mind, manual dexterity and a physically active body. Capable of working in standing or sitting position for long hours. Should be flexible towards rotational job duties in an assembly line and be focused on delivering quality output. He/ she should be open to owning responsibility to outcomes and work in a team.

Job Details	Qualifications Pack Code	ELE/Q3901		
	Job Role	Smartphone Assembly Technician (Applicable for National Scenarios)		
	Credits	TBD	Version number	1.0
	Sector	Electronics	Drafted on	09/09/2015
	Sub-sector	Consumer Electronics & IT Hardware	Last reviewed on	09/09/2015
	Occupation	Manufacturing	Next review date	09/09/2017
	NSQC Clearance on	19/12/2019		

Job Role	Smartphone Assembly Technician
Role Description	Responsible for carrying out assembly operation of smartphone in a production unit as per assembly instructions and standard operating procedures.
NSQF level	4
Minimum Educational Qualifications	12 th Standard (Science)
Maximum Educational Qualifications	
Prerequisite License or Training	Not Applicable
Minimum Job Entry Age	18 Years
Experience	Not applicable
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <ol style="list-style-type: none"> ELE/N3901 Perform assembly operation of mobile phone using appropriate methods & equipment ELE/N1002 Use basic health and safety practices in ESD sensitive workplace CSC/N1336 Work effectively in team
Performance Criteria	As described in the relevant OS units

Definitions	Keywords /Terms	Description
	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 they need 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(QP)	QP comprises the set of OSs, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
	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.
	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	Knowledge and understanding are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual need to perform to the required standard.	
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.	

Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/Generic Skills	Core skills or generic skills 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. In the context of the OS, these include communication related skills that are applicable to most job roles.
Keywords /Terms	Description
RAM	Random Access Memory
PCB	Printed Circuit Board
PPE	Personal Protective Equipment
IC	Integrated Circuit
CPU	Central Processing Unit
GPS	Global Positioning System
ESD	Electro Static Discharge
RF	Radio Frequency

Acronyms

ELE/N3901 Perform assembly operation of mobile phone using appropriate methods & equipment

National Occupational Standard



Overview

This unit deals with essential skills and knowledge required for a technician to assemble smartphone in a production unit using approved techniques and equipment.

ELE/N3901 Perform assembly operation of mobile phone using appropriate methods & equipment

National Occupational Standard	Unit Code	ELE/N3901
	Unit Title (Task)	Perform assembly operation of mobile phone using appropriate methods & equipment
	Description	This OS unit is specifically designed to prepare learners with the required learning outcomes needed to carry out assembling of smartphone in a given production facility. The job holder is expected to be capable of performing work assignments as per given work instructions/job specifications and quality compliances.
	Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Work safely • Prepare work place for assembly operation • Carry out pre-assembly inspection • Carry out assembling of parts • Comply with production requirements • Post assembly activities
Performance Criteria(PC) w.r.t. the Scope		
Element	Performance Criteria	
Prepare work place for assembly operation	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC1. use appropriate personal protective equipment while carrying out work PPE: protective head covers, ESD gloves, finger coat, ESD slipper, ESD wrist bands, aprons, eye protection glasses, first aid kit, warning signs, tapes, etc.</p> <p>PC2. select and wear appropriate, closely fitted and clean clothing and footwear before entering clean room</p> <p>PC3. identify and work within electrostatic protected areas while handling ESD sensitive parts</p> <p>PC4. confirm that appropriate ground paths are established to reduce electrostatic charge generation and accumulation as per relevant occupational health and safety guidelines</p> <p>PC5. comply with electrical safety practices while handling power tools and equipment</p> <p>PC6. verify that static control materials and appropriate hand gloves are used while dealing with sensitive assembly parts</p> <p>PC7. check that metal tweezers are not used while handling LCD, camera, rear & middle cover</p> <p>PC8. remove ornaments such as finger rings, metal bangles, etc. prior to carrying out assembly operation</p>	
Prepare work place for assembly operation	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC9. obtain assembly instructions & process flow, golden sample with specification, quality parameters, parts list, etc. from responsible authority as per standard</p>	

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	<p>operating procedures</p> <p>PC10. verify product descriptions from reliable source such as job specification documents or work instructions where applicable</p> <p>PC11. interpret job requirements accurately from given work instructions</p> <p>PC12. coordinate with others involved in the work to carry out assigned tasks effectively</p> <p>PC13. ensure that the workplace is adhered to recommended cleanroom ISO standards e.g. up to 0.5 micron</p> <p>PC14. obtain appropriate tools, equipment and materials needed in assembly operation Tools & equipment: automatic screwing machine, compression machine, common hand tools, etc.</p> <p>PC15. confirm that the selected tools, equipment and materials are safely calibrated and in good working conditions</p> <p>PC16. identify the required smartphone assembly components correctly as per given work instructions Components: LCD; rear & middle cover; touch panel; receiver; sensor sleeve; camera; vibrator; speaker; connectors; RF cable; antenna; battery; lens; PCBA; etc.</p>
<p>Carry out preassembly inspection</p>	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC17. verify that raw materials are thoroughly checked for any signs of damage as per required quality procedures</p> <p>PC18. carry out self and sequential inspection of previous procedure to confirm that the received assembly unit is complete prior to handling</p> <p>PC19. check that PCBA is tested and confirmed 'OK' or 'NG'</p>
<p>Carry out assembling of parts</p>	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC20. select appropriate type of assembly method and sequence as per given work instructions Method: e.g. hand assembly operations; machine assembly operations; fully automated assembly operations; combined assembly operations; etc.</p> <p>PC21. check that appropriate technique is applied to peel off stickers from front shell, rear & middle cover/case and LCD</p> <p>PC22. ionize the LCD in designated ESD sensitive area and confirm that dust particles are removed using cleaning agents such as IPA</p> <p>PC23. follow approved procedures to fix LCD and touch panel on the front shell</p> <p>PC24. use approved procedure to position and fix parts such as LCD, screen connector, rear & middle cover, touch panel, receiver, sensor sleeve, etc.</p> <p>PC25. carry out PCBA fixing on the middle cover/case using appropriate tools and technique and ensure correct type of screws are used</p>

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	<p>PC26. use approved procedures to carefully place and properly attach the LCD on PCBA</p> <p>PC27. ensure that LCD safety cover tape is placed to prevent contact with dust particle</p> <p>PC28. use approved methods to fix modules for such as SIM, SD card, etc. in correct position and assembling sequence on the PCBA</p> <p>PC29. apply correct procedures and assembly sequence to fix the camera module, vibrator, speaker, etc. on the rear case</p> <p>PC30. interpret IMEI writing results correctly as per standard operating procedures</p> <p>PC31. confirm that the assembled product is placed in ESD tray after every assembly</p>
<p>Carry out connectors Fixing using approved procedures</p>	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC32. use approved techniques to carry out fixing operations of connectors, RF cable, etc. as per standard operating procedures or jig instructions Techniques: soldering, pasting, screwing, etc.</p> <p>PC33. connect the connector modules with PCBA such as speaker, camera, battery, earphone, SIM, etc.</p> <p>PC34. check that antenna is pasted appropriately in the middle cover</p> <p>PC35. fix rear cover with middle cover & connect any remaining connector module as per required operating standards</p> <p>PC36. fix the camera lens appropriately on the middle cover as per required quality standards</p> <p>PC37. confirm that parts are appropriately aligned and positioned prior to pasting where applicable</p> <p>PC38. monitor the assembly operation and identify any problems that may occur as per required quality standards</p>
<p>Comply with production requirements</p>	<p>To be competent, the user/ individual on the job must be able to:</p> <p>PC39. confirm that work carried out is in compliant with organization's production standards Parameters: correct identification of parts; positioning of parts accurately; correct orientation or alignment; fixing and soldering quality; selection of nondetective parts; adherence to clean room standards (free of dust or dirt); meet required cycle time; production target per hour; etc.</p> <p>PC40. ensure that the assembled product meets given work instructions and production quality requirements Quality requirements: meet production target; adhere to relevant regulations in product assembly; refer to manufacturer's instructions; etc.</p> <p>PC41. identify any possible faults or defects in assembly and ensure that they are returned to appropriate personnel</p>
<p>Post assembly</p>	<p>To be competent, the user/ individual on the job must be able to:</p>

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<p>activities</p>	<p>PC42. report any problems or issues related to work to immediate authority and seek guidance on how to solve the problem</p> <p>PC43. leave the work area in a safe condition after completing work</p> <p>PC44. dispose wastes safely as per relevant environmental health and safety guidelines</p> <p>PC45. store all used tools and equipment in appropriate storing area</p> <p>PC46. deal appropriately with finished assemblies and complete any necessary documentation</p>
<p>Knowledge and Understanding (K)</p>	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. relevant legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions</p> <p>KA2. relevant health and safety requirements applicable in the work place</p> <p>KA3. own job role and responsibilities and sources for information pertaining to employment terms, entitlements, job role and responsibilities</p> <p>KA4. reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA5. how to engage with specialists for support in order to resolve incidents and service requests</p> <p>KA6. importance of working in clean and safe environment practices and procedures</p> <p>KA7. relevant people and their responsibilities within the work area</p> <p>KA8. escalation matrix and procedures for reporting work and employment related issues</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. importance of using appropriate personal protection equipment and safety control measures at work</p> <p>KB2. possible risks and hazards involved in electrostatic sensitive areas and standard precautionary measures</p> <p>KB3. principle of electro static discharge (ESD), relevant standards and protection methods</p> <p>KB4. what is cleanroom, relevant industrial ISO standards and how to maintain cleanroom in the work environment</p> <p>KB5. electrical safety measures while working with electrically powered tools and equipment</p> <p>KB6. necessity of earthing systems arrangements and requirements</p> <p>KB7. importance of using gloves/finger coats while handling ESD sensitive assembly parts</p> <p>KB8. basic of electricals and electronics e.g. circuits (load, conductor, voltage), D.C & A.C. power source, current, etc.</p>

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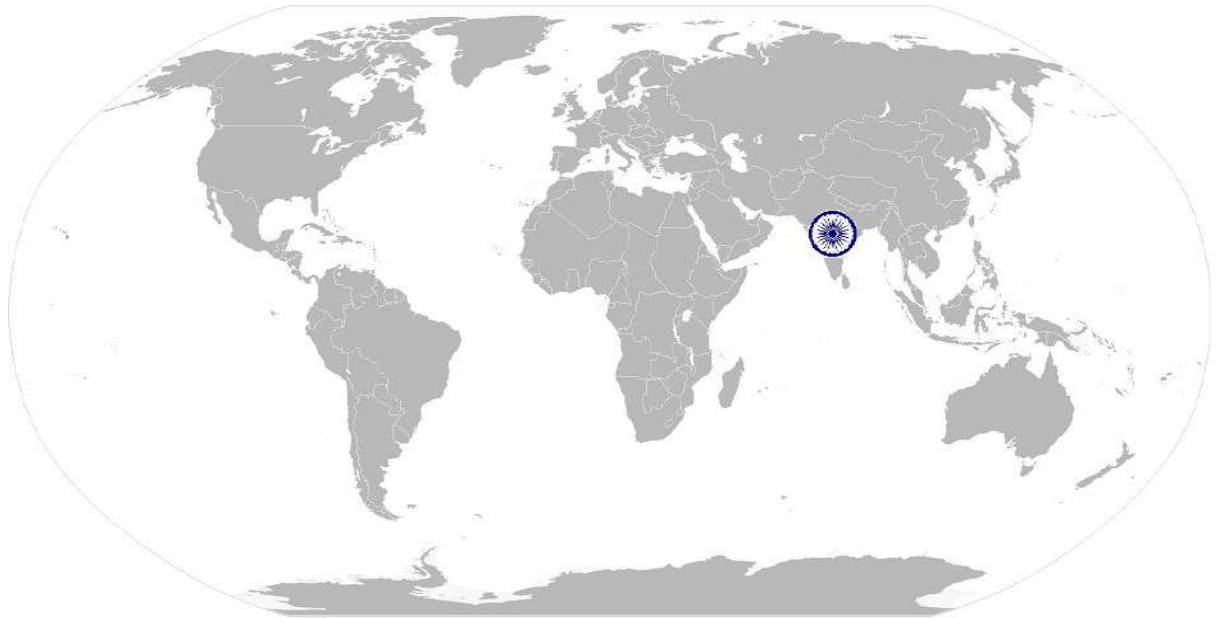
	<p>KB9. blueprint specifications, drawings and schedules pertaining to smartphone assembling</p> <p>KB10. range of equipment and hand tools used in smartphone assembly operation</p> <p>KB11. key parts/components of smartphone and their functions</p> <p>KB12. different types of smartphone connectors and their uses</p> <p>KB13. types of screws, tools and factors determining quality of screwing such as type of torque, bit and process awareness of manual and automatic screws</p> <p>KB14. significance of IMEI writing and reading during assembly operation</p> <p>KB15. importance of self and sequential inspection in assembly operation</p> <p>KB16. types of smartphone assembling methods and assembling sequence</p> <p>KB17. basic knowledge of manual soldering</p> <p>KB18. what are point and drag soldering and their uses</p> <p>KB19. factors influencing quality of manual soldering e.g. temperature, type of soldering equipment, type of bit, etc.</p> <p>KB20. importance of ESD trays in a smartphone assembly unit</p> <p>KB21. importance of correct positioning, aligning, in assembly operation</p> <p>KB22. how to identify faults and defects in components/parts</p> <p>KB23. importance of IMEI writing and relevant regulatory requirements</p> <p>KB24. significance of functional testing such as drop testing, OS flashing, etc.</p> <p>KB25. escalation matrix used to report technical problems or malfunction in tools, equipment, assembly, etc. to responsible authority</p> <p>KB26. safe disposal of hazardous and non-hazardous waste materials</p> <p>KB27. documenting work completion with required information as per organization's standard operational procedures</p> <p>KB28. technical terminology, jargons, signs, symbols, etc. related to assembly operation</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. fill up appropriate forms, activity logs, attendance sheets as per organizational format in English and/or local language</p> <p>SA2. document achieved daily production target, quality related information, etc. in appropriate format</p>
	Reading Skills
<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA3. read/listen and interpret information correctly from various work instruction documents, manuals, health and safety instructions, memos, etc. applicable to the job in English and/or local language</p>	

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	<p>SA4. read relevant symbols, labels or descriptions on components and equipment while performing assembly operation</p> <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA5. convey and share technical information clearly using appropriate language</p> <p>SA6. check and clarify task-related information</p> <p>SA7. liaise with appropriate authorities using correct protocol</p> <p>SA8. communicate with people in respectful form and manner in line with organizational protocol</p>
B. Professional Skills	<p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. seek clarification from immediate supervisor or responsible authority on how to rectify problems at work when faced with difficult decisions</p> <p>SB2. identify faults and defects in components and follow appropriate segregation procedures</p>
	<p>Plan and Organize</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB3. plan, prioritize and sequence work operations as per job requirements</p> <p>SB4. organize and analyze information relevant to work</p> <p>SB5. basic concepts of shop-floor work productivity including waste reduction, efficient material usage and optimization of time</p>
	<p>Customer Centricity</p> <p>NA</p>
	<p>Problem Solving</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB6. identify problems with work planning, procedures, output and behavior and their implications</p> <p>SB7. prioritize and plan for problem solving</p> <p>SB8. communicate problems appropriately to others</p> <p>SB9. identify sources of information and support for problem solving</p> <p>SB10. seek assistance and support from other sources to solve problems</p> <p>SB11. identify effective resolution techniques</p> <p>SB12. select and apply resolution techniques</p> <p>SB13. seek evidence for problem resolution</p>
	<p>Analytical Thinking</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SB14. apply logical reasoning to solve problems or any potential problems related</p>

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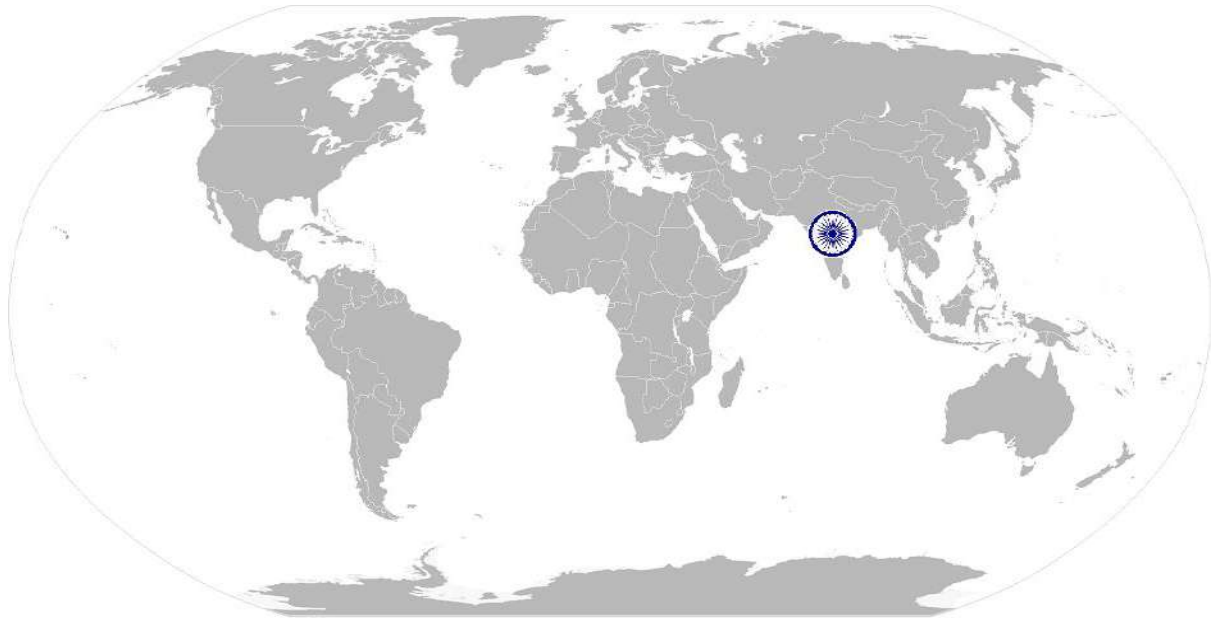
	work by analysing previous experiences
	Critical Thinking
	The user/ individual on the job needs to know and understand how to: SB15. determine the impact of inappropriate selection of work procedures and inputs to overall work outcome



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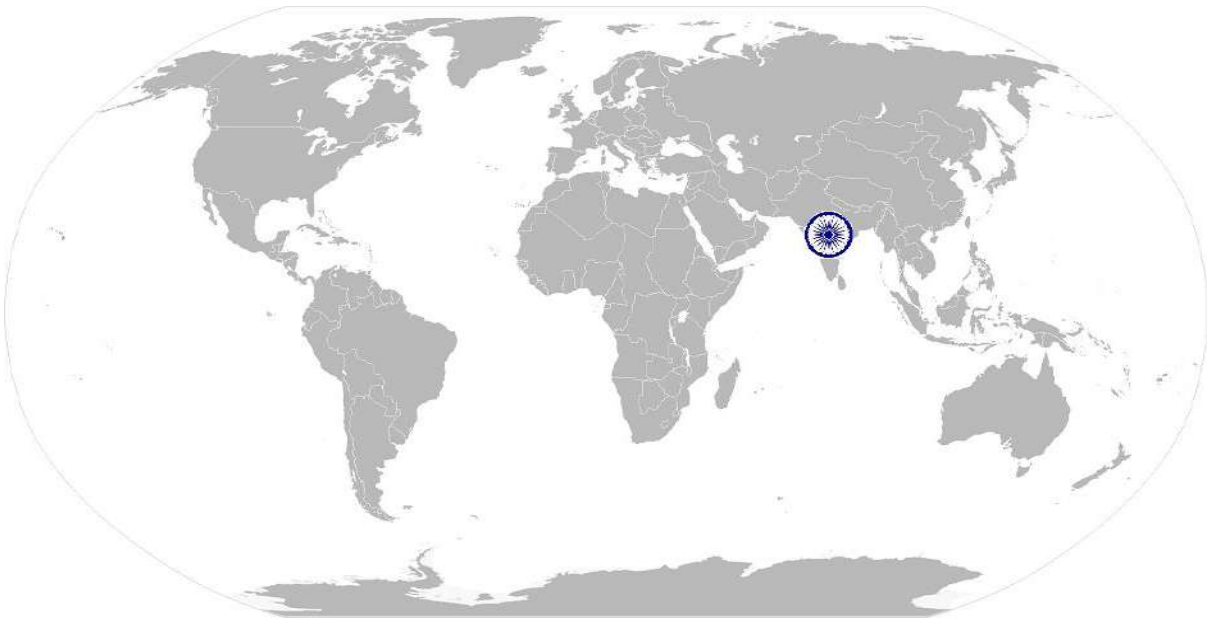
NOS Version Control

NOS Code		ELE/N3901	
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	09/09/2015
Industry Sub-sector	Consumer Electronics & IT Hardware	Last reviewed on	09/09/2015
Occupation	Manufacturing	Next review date	09/09/2017



ELE/N1002 Use basic health and safety practices in ESD sensitive workplace

National Occupational Standard



Overview

This unit covers health, safety and security practices associated with electrical and electronics system. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment in a given work site.

ELE/N1002 Use basic health and safety practices in ESD sensitive workplace

National Occupational Standard	Unit Code	ELE/N1002
	Unit Title (Task)	Use basic health and safety practices in ESD sensitive workplace
	Description	This unit covers health, safety and security guidelines pertaining to work carried out in ESD sensitive areas. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment in a work site or building structure. It covers responsibilities towards self, others, assets and the environment.
	Scope	This unit/task covers the following: <ul style="list-style-type: none"> • ESD sensitive safety measures • Health and safety • Fire safety • Emergencies, rescue and first-aid procedures
	Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria	
ESD sensitive safety measures	To be competent, the user/individual on the job must be able to: <p>PC1. ensure that approved ESD safety procedures are followed while handling unprotected ESD sensitive devices Procedures: e.g. use of ESD protective work surface, ESD protective flooring or floor mats, wear personnel grounding wrist straps, protective footwear such as heel straps, toe straps or shoes</p> <p>PC2. check that non-essential or personal items, equipment, etc. carrying electrostatic generating potential are not placed on ESD protective work surfaces</p> <p>PC3. confirm that ESD protective smocks are worn to cover all personal garments above the waist except at the neck area</p> <p>PC4. use air ionizers whenever required to reduce electrostatic potential within unprotected areas</p> <p>PC5. comply with ESD caution signages or warnings posted in ESD protected work area, entrances, etc.</p>	
Health and safety	To be competent, the user/individual on the job must be able to: <p>PC6. use protective clothing/equipment suitable to tasks and work conditions Protective clothing: protective head covers, ESD gloves, finger coat, ESD slipper, ESD wrist bands, heel straps, toe-straps, aprons, eye protection glasses, etc.</p> <p>PC7. state the name and location of people responsible for health and safety in the workplace</p> <p>PC8. state the names and location of documents that refer to health and safety in the workplace</p>	

ELE/N1002 Use basic health and safety practices in ESD sensitive workplace

	<p>PC9. identify job-site hazardous work and state possible causes of risk or accident in the workplace Hazards: electrical hazards (dealing with high voltage equipment, power supply and points, loose and naked cables and wires, machines etc.); sharp edged and heavy tools; heated metals; working in confined work area; etc. Possible causes of risk and accident: physical actions; not following instructions; inattention; sickness and incapacity (such as drunkenness); health hazards (such as untreated injuries and contagious illness); not taking safety precautions</p> <p>PC10. follow warning signs (danger, out of service, ESD signs, etc.) while accessing sensitive work areas</p> <p>PC11. exercise safety precautions while using soldering machine</p> <p>PC12. test any electrical tools or equipment using insulated testing devices prior to handling</p> <p>PC13. ensure positive isolation of electrical equipment & system as per given standards</p> <p>PC14. carry out safe working practices while dealing with hazards to ensure the safety of self and others Safe working practices: handle tools in the correct manner and store and maintain them properly; keep work area clear of clutter, spillage and unsafe object lying casually; maintain dry work area, switch off the power supply when not required, etc.; safe lifting and carrying of heavy objects where necessary; use equipment that is working properly and is well maintained; etc.</p> <p>PC15. state methods of accident prevention in the work environment of the job role Methods of accident prevention: training in health and safety procedures; using health and safety procedures; use of equipment and working practices (such as safe carrying procedures); safety notices, advice; instruction from colleagues and supervisors</p> <p>PC16. state location of general health and safety equipment in them workplace General health and safety equipment: fire extinguishers; first aid equipment; safety instruments and clothing; safety installations (e.g. fire exits, exhaust fans)</p> <p>PC17. inform relevant authorities about any abnormal situation/behavior of any equipment/system promptly</p>
Fire safety	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC18. use the various appropriate fire extinguishers on different types of fires correctly</p> <p>PC19. demonstrate rescue techniques applied during fire hazard</p> <p>PC20. demonstrate good housekeeping in order to prevent fire hazards</p>

ELE/N1002 Use basic health and safety practices in ESD sensitive workplace

<p>Emergencies, rescue and first-aid procedures</p>	<p>PC21. demonstrate the correct use of a fire extinguisher</p> <p>To be competent, the user/individual on the job must be able to:</p> <p>PC22. demonstrate how to free a person from electrocution</p> <p>PC23. administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.</p> <p>PC24. demonstrate basic techniques of bandaging</p> <p>PC25. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments</p> <p>PC26. perform and organize loss minimization or rescue activity during an accident in real or simulated environments</p> <p>PC27. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases</p> <p>PC28. demonstrate the artificial respiration and the CPR Process</p> <p>PC29. participate in emergency procedures Emergency procedures: raising alarm, safe/efficient, evacuation, correct means of escape, correct assembly point, roll call, correct return to work</p> <p>PC30. complete a written accident/incident report or dictate a report to another person, and send report to person responsible Incident Report includes details of: name, date/time of incident, date/time of report, location, environment conditions, persons involved, sequence of events, injuries sustained, damage sustained, actions taken, witnesses, supervisor/manager notified</p> <p>PC31. demonstrate correct method to move injured people and others during an emergency</p>
<p>Knowledge and Understanding (K)</p>	
<p>A. Organizational Context (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. names (and job titles if applicable), and where to find, all the people responsible for health and safety in a workplace</p> <p>KA2. names and location of documents that refer to health and safety in the workplace</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. meaning of “hazards” and “risks”</p> <p>KB2. health and safety hazards commonly present in the work environment and related precautions</p> <p>KB3. possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible</p> <p>KB4. precautionary measures to be taken in ESD sensitive work area</p>

ELE/N1002 Use basic health and safety practices in ESD sensitive workplace

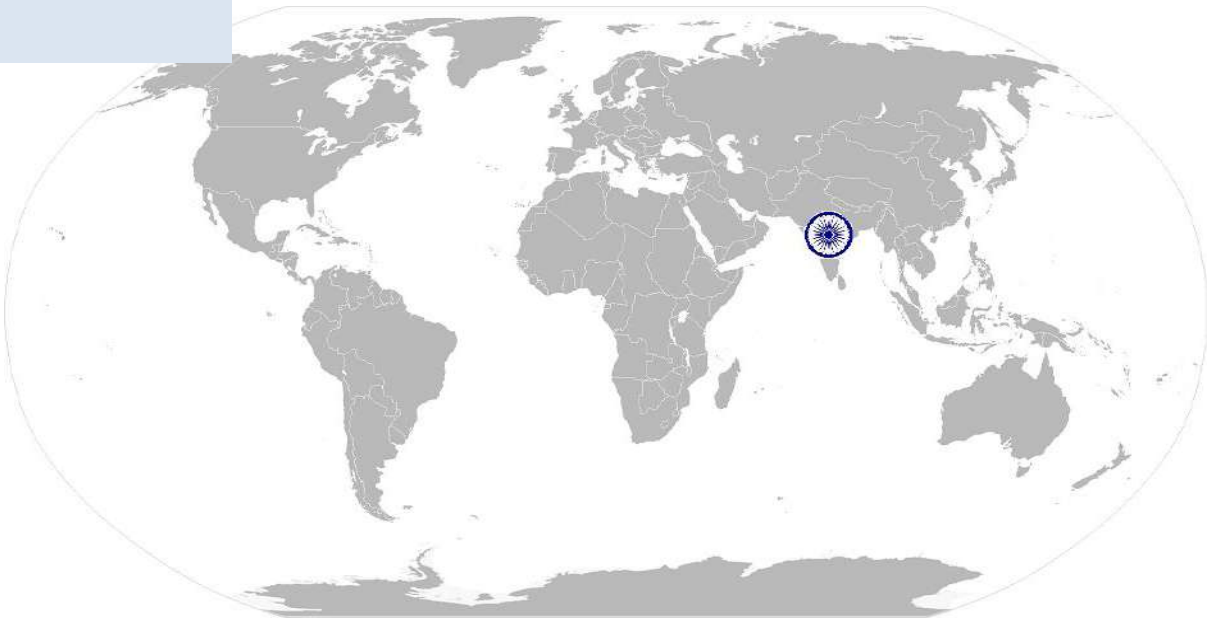
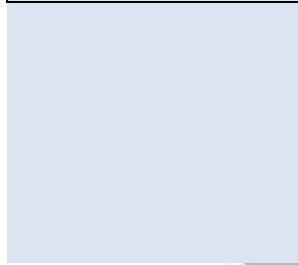
	<p>KB5. possible causes of risk and accident</p> <p>KB6. methods of accident prevention</p> <p>KB7. safe working practices when working with tools and equipment</p> <p>KB8. safe working practices while working at various hazardous sites</p> <p>KB9. where to find all the general health and safety equipment in the Workplace</p> <p>KB10. positive isolation of electrical equipment and system</p> <p>KB11. safe handling and disposal of hazardous wastes</p> <p>KB12. importance of using protective clothing/equipment while working in an ESD sensitive workplace</p> <p>KB13. precautionary activities taken to prevent fire accident</p> <p>KB14. various causes of fire Causes of fires: heating of metal; spontaneous ignition; sparking; electrical heating; loose fires (smoking, welding, etc.); chemical fires; etc.</p> <p>KB15. techniques of using the different fire extinguishers</p> <p>KB16. different materials used for extinguishing fire Materials: sand, water, foam, CO₂, dry powder</p> <p>KB17. building fire safety regulations</p> <p>KB18. emergency rescue techniques applied during a fire hazard</p> <p>KB19. various types of safety signs and what they mean</p> <p>KB20. appropriate basic first aid treatment relevant to the condition e.g. shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries</p> <p>KB21. content of written accident report</p> <p>KB22. potential injuries and ill health associated with incorrect manual handling</p> <p>KB23. safe lifting, carrying and transporting practices</p> <p>KB24. personal safety, health and dignity issues relating to the movement of a person by others</p> <p>KB25. potential impact to a person who is moved incorrectly</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: <ul style="list-style-type: none"> SA1. fill up appropriate forms, activity logs, attendance sheets as per organizational format in English and/or local language SA2. write basic accident or incident report as witnessed in appropriate format to relevant authority
	Reading Skills

ELE/N1002 Use basic health and safety practices in ESD sensitive workplace

	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA3. read/listen and interpret information correctly from relevant instruction documents, manuals, health and safety instructions, memos, etc. applicable to the job in English and/or local language</p> <p>SA4. read relevant signages, warnings, labels or descriptions on equipment, etc. while carrying out work activities</p>
	<p>Communication skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA5. convey and share technical information clearly using appropriate language</p> <p>SA6. check and clarify task-related information</p> <p>SA7. liaise with appropriate authorities using correct protocol</p> <p>SA8. communicate with people in respectful form and manner in line with organizational protocol</p>
B. Professional Skills	<p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. seek clarification from immediate supervisor or responsible authority on how to secure safety at work when faced with difficult decisions</p> <p>SB2. exercise most appropriate solutions to safety breaches at work</p>
	<p>Plan and Organize</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB3. plan, prioritize and sequence work operations as per job requirements</p> <p>SB4. organize and analyze information relevant to work</p> <p>SB5. basic concepts of shop-floor work productivity including waste reduction, efficient material usage and optimization of time</p>
	<p>Customer Centricity</p> <p>NA</p>
	<p>Problem Solving</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB6. identify problems with work planning, procedures, output and behavior and their implications</p> <p>SB7. prioritize and plan for problem solving</p> <p>SB8. communicate problems appropriately to others</p> <p>SB9. identify sources of information and support for problem solving</p> <p>SB10. seek assistance and support from other sources to solve problems</p> <p>SB11. identify effective resolution techniques</p> <p>SB12. select and apply resolution techniques</p> <p>SB13. seek evidence for problem resolution</p>

ELE/N1002 Use basic health and safety practices in ESD sensitive workplace

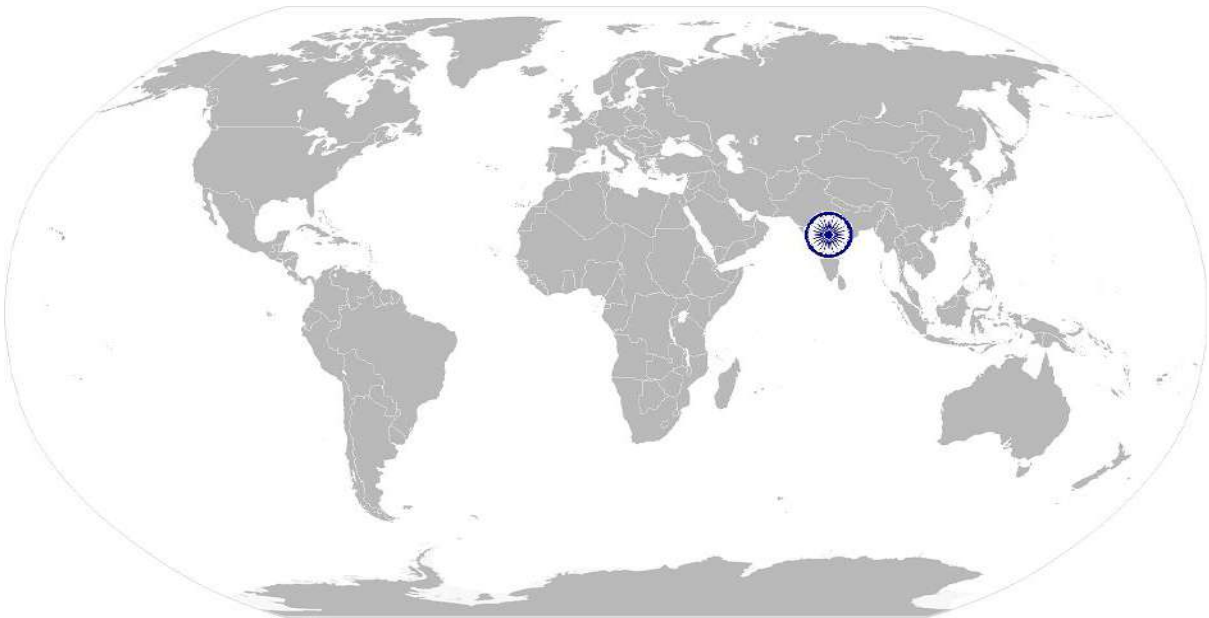
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB14. infer records of past incidents, emergencies, etc. to establish strengths and weaknesses of alternative solutions, conclusions or approaches to safety problems
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB15. use reasoning ability to determine possible solutions to potential dangers or insecurity in the work place



ELE/N1002 Use basic health and safety practices in ESD sensitive workplace

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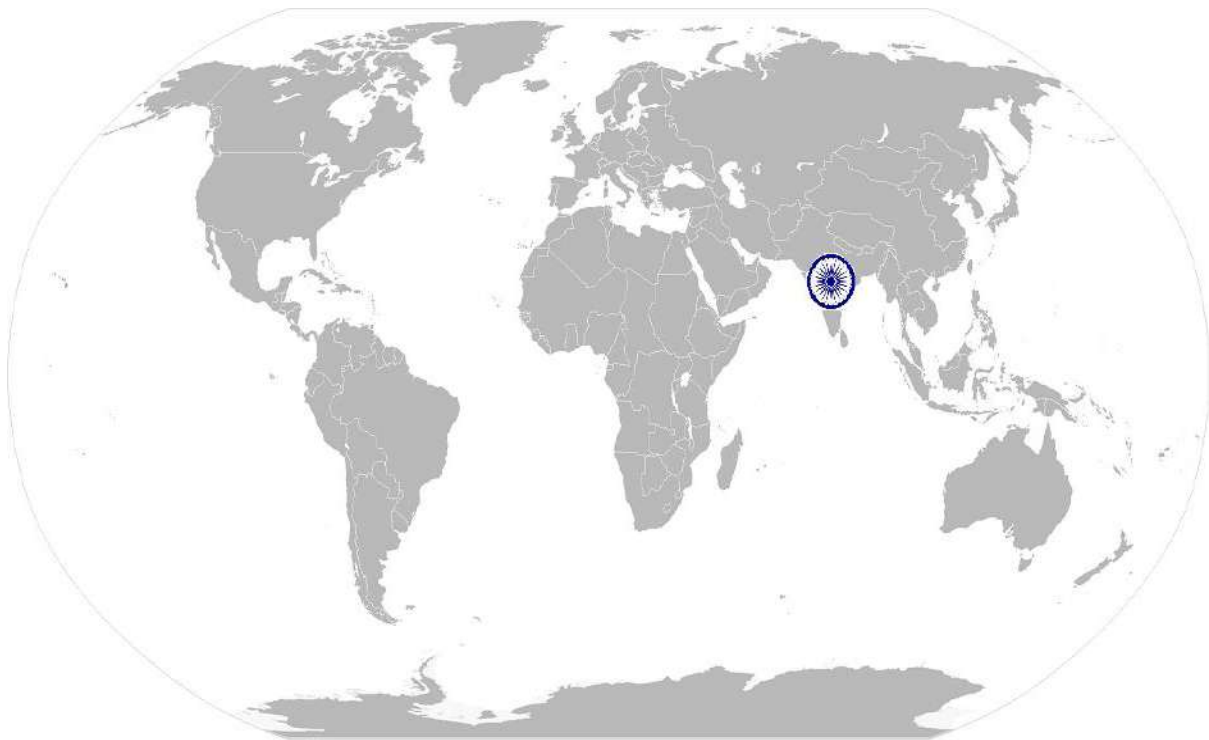
NOS Code	ELE/N1002		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	09/09/2015
Industry Sub-sector	Consumer Electronics & IT Hardware	Last reviewed on	09/09/2015
Occupation	Manufacturing	Next review date	09/09/2017



CSC/N1336

Work effectively in team

National Occupational Standard



Overview

This unit covers basic practices that improve effectiveness of working in a team in an organizational set-up.

CSC/N1336

Work effectively in team

National Occupational Standard	Unit Code	CSC/N1336
	Unit Title (Task)	Work effectively with others
	Description	This unit covers basic etiquette and competencies that a candidate is required to possess and demonstrate in their behavior and interactions with others at the workplace.
	Scope	This unit/task covers the following: <ul style="list-style-type: none"> • Work effectively with others
	Performance Criteria(PC) w.r.t. the Scope	
	Element	Performance Criteria
	Work effectively with others	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required</p> <p>PC2. accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt</p> <p>PC3. give information to others clearly, at a pace and in a manner that helps them to understand</p> <p>PC4. display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible</p> <p>PC5. consult with and assist others to maximize effectiveness and efficiency in carrying out tasks</p> <p>PC6. display appropriate communication etiquette while working Communication etiquette: do not use abusive language; use appropriate titles and terms of respect; do not eat or chew while talking (vice versa) etc.</p> <p>PC7. display active listening skills while interacting with others at work</p> <p>PC8. use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism</p> <p>PC9. demonstrate responsible and disciplined behaviors at the workplace Disciplined behaviors: e.g. punctuality; completing tasks as per given time and standards; not gossiping and idling time; eliminating waste, honesty, etc.</p> <p>PC10. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict</p>
	Knowledge and Understanding (K)	
	A. Organizational Context (Knowledge of the company / organization and	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions</p> <p>KA2. reporting structure, inter-dependent functions, lines and procedures in the work area</p>

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Work effectively in team

its processes)	<p>KA3. relevant people and their responsibilities within the work area</p> <p>KA4. escalation matrix and procedures for reporting work and employment related issues Occupational</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. various categories of people that one is required to communicate and co-ordinate within the organization</p> <p>KB2. importance of effective communication in the workplace</p> <p>KB3. importance of teamwork in organizational and individual success</p> <p>KB4. various components of effective communication</p> <p>KB5. key elements of active listening</p> <p>KB6. value and importance of active listening and assertive communication</p> <p>KB7. barriers to effective communication</p> <p>KB8. importance of tone and pitch in effective communication</p> <p>KB9. importance of avoiding casual expletives and unpleasant terms while communicating professional circles</p> <p>KB10. how poor communication practices can disturb people, environment and cause problems for the employee, the employer and the customer</p> <p>KB11. importance of ethics for professional success</p> <p>KB12. importance of discipline for professional success</p> <p>KB13. what constitutes disciplined behavior for a working professional</p> <p>KB14. common reasons for interpersonal conflict</p> <p>KB15. importance of developing effective working relationships for professional success</p> <p>KB16. expressing and addressing grievances appropriately and effectively</p> <p>KB17. importance and ways of managing interpersonal conflict effectively</p>
<p>Skills (S)</p>	
<p>A. Professional Skills</p>	<p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. read basic terms and terminologies to accurately interpret work related documents, labels, supervisor instructions in the local language</p> <p>SA2. read and interpret accurate information from various relevant work instructions and records</p> <p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA3. write clear and legible notes to self, colleagues and seniors to pass messages, keep records, prepare to-do lists, take down instructions</p> <p>SA4. write basic numbers, quantities and work-related terminology for operational requirements in the local language</p> <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p>

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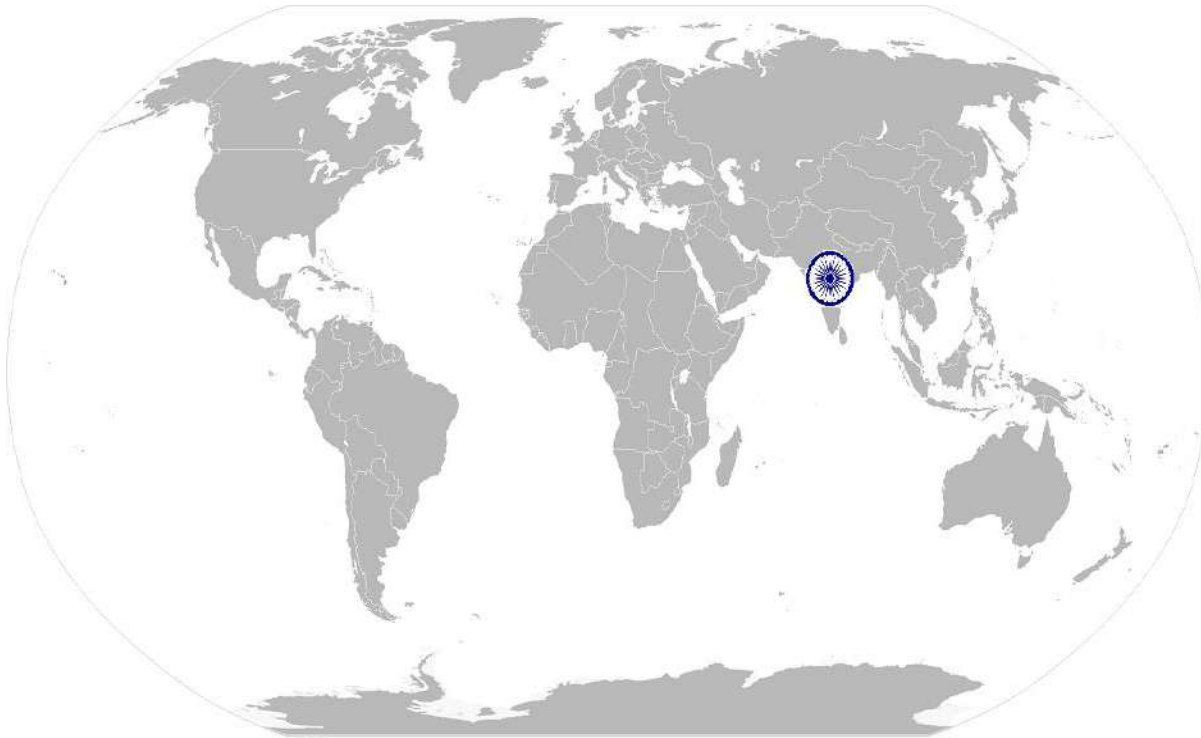
	<p>SA5. interact with the supervisor appropriately (correct protocol and manner of speaking) in order to understand the basic requirements of the product, production plans and other associated requirements</p> <p>SA6. give clear instructions to co-workers about the type of output required and answer queries</p> <p>SA7. display active listening skills while interacting with co-workers and other in the workplace</p>
B. Professional Skills	Decision Making
	NA
	Plan and Organize
	The user/individual on the job needs to know and understand how to:
	SB1. use appropriate planning to maintain a smooth relationship with fellow team members
	SB2. take steps within one's limits of authority to initiate modification in plan if the circumstances require it
	Customer Centricity
	The user/individual on the job needs to know and understand how to:
	SB3. check that work meets customer requirements SB4. deliver consistent and reliable service to internal and external customers
Problem Solving	
The user/individual on the job needs to know and understand how to:	
SB5. work with co-workers and supervisor to resolve any issues that threaten disruption, increase risk, cause delays or under-achievement of quality and targets as per the planned schedule	
Analytical Thinking	
NA	
Critical Thinking	
NA	

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Work effectively in team

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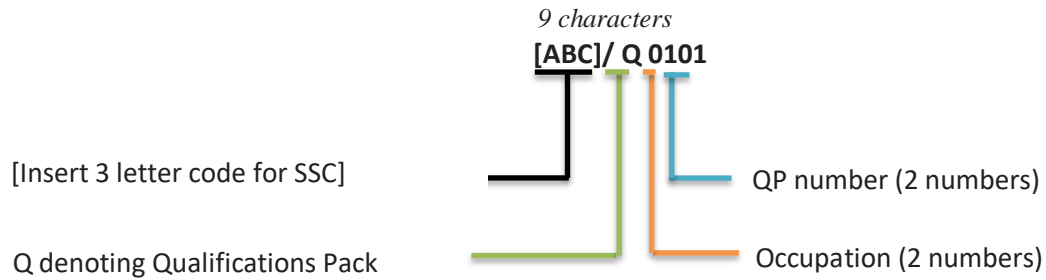
NOS Code	CSC/N1336		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	09/09/2015
Industry Sub-sector	Consumer Electronics & IT Hardware	Last reviewed on	09/09/2015
Occupation	Manufacturing	Next review date	09/09/2017



Annexure

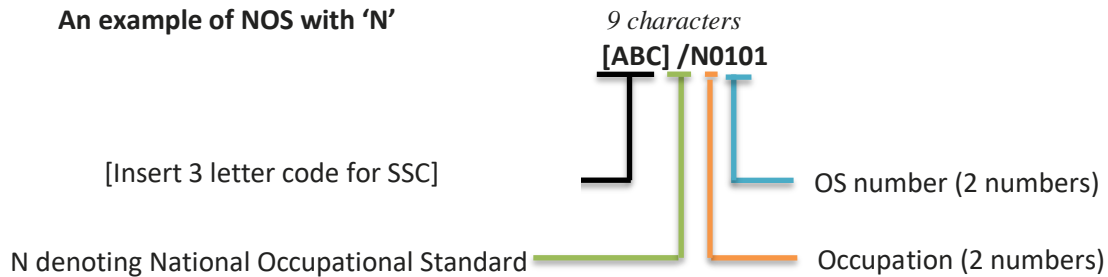
Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard

An example of NOS with 'N'



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

Sub-sector	Range of Occupation numbers
Consumer Electronics & IT Hardware	31 - 40, 76 - 80
Security Surveillance	41 - 50
Semiconductor & Components	01 - 20
PCB Design and Manufacturing	21 - 30, 86 - 90
Electronics Manufacturing System	51 - 55
Solar and LED	56 - 60, 91 - 95
E-Mobility and Battery	66 - 70
Communication and Broadcasting	81 - 85
Industrial Automation	61 - 65, 71 - 75

Sequence	Description	Example
Three letters	Industry Name	ELE
Slash	/	/
Next letter	Whether QP or NOS	Q
Next two numbers	Occupation code	01
Next two numbers	OS number	01

Criteria For Assessment Of Trainees

Job Role: Smartphone Assembly Technician

Qualification Pack: ELE/Q3901

Sector Skill Council: Electronics Sector Skills Council of India

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. 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 this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Compulsory NOS				Marks Allocation	
Total Marks: 300					
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out of	Theory	Skills Practical
ELE/N3901 Perform assembly operation of mobile phone using appropriate methods & equipment	PC1.use appropriate personal protective equipment while carrying out work	100	2	0	2
	PC2.select and wear appropriate, closely fitted and clean clothing and footwear before entering clean room		2	0	2
	PC3.identify and work within electrostatic protected areas while handling ESD sensitive parts		2	0	2
	PC4.confirm that appropriate ground paths are established to reduce electrostatic charge generation and accumulation as per relevant occupational health and safety guidelines		3	1	2
	PC5.comply with electrical safety practices while handling power tools and equipment		3	1	2
	PC6.verify that static control materials and appropriate hand gloves are used while dealing with sensitive assembly parts		2	0	2

PC7.check that metal tweezers are not used while handling LCD, camera, rear & middle cover	1	0	1
PC8.remove ornaments such as finger rings, metal bangles, etc. prior to carrying out assembly operation	2	0	2
PC9.obtain assembly instructions & process flow, golden sample with specification, quality parameters, parts list, etc. from responsible authority as per standard operating procedures	3	1	2
PC10.verify product descriptions from reliable source such as job specification documents or work instructions where applicable	3	1	2
PC11.interpret job requirements accurately from given work instructions	3	1	2
PC12.coordinate with others involved in the work to carry out assigned tasks effectively	2	0	2
PC13.ensure that the workplace is adhered to recommended cleanroom ISO standards e.g. up to 0.5 micron	3	1	2
PC14.obtain appropriate tools, equipment and materials needed in assembly operation	2	0	2
PC15.confirm that the selected tools, equipment and materials are safely calibrated and in good working conditions	2	0	2
PC16.identify the required smartphone assembly components correctly as per given work instructions	3	1	2
PC17.verify that raw materials are thoroughly checked for any signs of damage as per required quality procedures	2	1	1
PC18.carry out self and sequential inspection of previous procedure to confirm that the received assembly unit is complete prior to handling	2	0	2
PC19.check that PCBA is tested and confirmed 'OK' or 'NG'	2	1	1
PC20.select appropriate type of assembly method and sequence as per given work instructions	3	1	2
PC21.check that appropriate technique is applied to peel off stickers from front shell, rear & middle cover/case and LCD	2	1	1
PC22.ionize the LCD in designated ESD sensitive area and confirm that dust particles are removed using cleaning agents such as IPA	2	0	2
PC23.follow approved procedures to fix LCD and touch panel on the front shell	2	1	1
PC24.use approved procedure to position and fix parts such as LCD, screen connector, rear & middle cover, touch panel, receiver, sensor sleeve, etc.	2	1	1
PC25.carry out PCBA fixing on the middle cover/case using appropriate tools and technique and ensure correct type of screws are used	2	0	2
PC26.use approved procedures to carefully place and properly attach the LCD on PCBA	3	1	2
PC27.ensure that LCD safety cover tape is placed to prevent contact with dust particle	2	0	2

	PC28.use approved methods to fix modules for such as SIM, SD card, etc. in correct position and assembling sequence on the PCBA		3	1	2
	PC29.apply correct procedures and assembly sequence to fix the camera module, vibrator, speaker, etc. on the rear case		2	1	1
	PC30.interpret IMEI writing results correctly as per standard operating procedures		3	1	2
	PC31.confirm that the assembled product is placed in ESD tray after every assembly		2	0	2
	PC32.use approved techniques to carry out fixing operations of connectors, RF cable, etc. as per standard operating procedures or jig instructions		3	1	2
	PC33.connect the connector modules with PCBA such as speaker, camera, battery, earphone, SIM, etc.		2	0	2
	PC34.check that antenna is pasted appropriately in the middle cover		2	0	2
	PC35.fix rear cover with middle cover & connect any remaining connector module as per required operating standards		3	1	2
	PC36.fix the camera lens appropriately on the middle cover as per required quality standards		2	1	1
	PC37.confirm that parts are appropriately aligned and positioned prior to pasting where applicable		1	0	1
	PC38.monitor the assembly operation and identify any problems that may occur as per required quality standards		1	0	1
	PC39.confirm that work carried out is in compliant with organization's production standards		2	1	1
	PC40.ensure that the assembled product meets given work instructions and production quality requirements		2	1	1
	PC41.identify any possible faults or defects in assembly and ensure that they are returned to appropriate personnel		2	0	2
	PC42.report any problems or issues related to work to immediate authority and seek guidance on how to solve the problem		2	1	1
	PC43.leave the work area in a safe condition after completing work		1	0	1
	PC44.dispose wastes safely as per relevant environmental health and safety guidelines		2	1	1
	PC45.store all used tools and equipment in appropriate storing area		1	0	1
	PC46.deal appropriately with finished assemblies and complete any necessary documentation		2	1	1
		Total	100	25	75
ELE/N1002 Use basic health and safety practices in ESD sensitive workplace	PC1.ensure that approved ESD safety procedures are followed while handling unprotected ESD sensitive devices	100	4	1	3
	PC2.check that non-essential or personal items, equipment, etc. carrying electrostatic generating potential are not placed on ESD protective work surfaces		2	0	2

PC3.confirm that ESD protective smocks are worn to cover all personal garments above the waist except at the neck area	2	0	2
PC4.use air ionizers whenever required to reduce electrostatic potential within unprotected areas	3	0	3
PC5.comply with ESD caution signages or warnings posted in ESD protected work area, entrances, etc.	5	2	3
PC6.use protective clothing/equipment suitable to tasks and work conditions	3	0	3
PC7.state the name and location of people responsible for health and safety in the workplace	3	1	2
PC8.state the names and location of documents that refer to health and safety in the workplace	3	1	2
PC9.identify job-site hazardous work and state possible causes of risk or accident in the workplace	2	0	2
PC10.follow warning signs (danger, out of service, ESD signs, etc.) while accessing sensitive work areas	3	1	2
PC11.exercise safety precautions while using soldering machine	5	2	3
PC12.test any electrical tools or equipment using insulated testing devices prior to handling	2	0	2
PC13.ensure positive isolation of electrical equipment & system as per given standards	3	1	2
PC14.carry out safe working practices while dealing with hazards to ensure the safety of self and others	3	1	2
PC15.state methods of accident prevention in the work environment of the job role	3	1	2
PC16.state location of general health and safety equipment in them workplace	3	1	2
PC17.inform relevant authorities about any abnormal situation/behavior of any equipment/system promptly	2	0	2
PC18.use the various appropriate fire extinguishers on different types of fires correctly	4	1	3
PC19.demonstrate rescue techniques applied during fire hazard	3	0	3
PC20.demonstrate good housekeeping in order to prevent fire hazards	3	0	3
PC21.demonstrate the correct use of a fire extinguisher	3	0	3
PC22.demonstrate how to free a person from electrocution	4	1	3
PC23.administer appropriate first aid to victims where required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.	3	0	3
PC24.demonstrate basic techniques of bandaging	5	2	3
PC25.respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments	3	1	2
PC26.perform and organize loss minimization or rescue activity during an accident in real or simulated environments	3	1	2

	PC27.administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases		3	0	3
	PC28.demonstrate the artificial respiration and the CPR Process		4	2	2
	PC29.participate in emergency procedures		4	2	2
	PC30.complete a written accident/incident report or dictate a report to another person, and send report to person responsible Incident		4	2	2
	PC31.demonstrate correct method to move injured people and others during an emergency		3	1	2
		Total	100	25	75
CSC/N1336 Work effectively in team	PC1.accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	100	10	3	7
	PC2.accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt		10	3	7
	PC3.give information to team members clearly, at a pace and in a manner that helps them to understand		10	3	7
	PC4.display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible		10	3	7
	PC5.consult with and assist others to maximize effectiveness and efficiency in carrying out tasks		10	3	7
	PC6.display appropriate communication etiquette while working		10	3	7
	PC7.display active listening skills while interacting with others at work		10	3	7
	PC8.use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism		10	3	7
	PC9.demonstrate responsible and disciplined behaviors at the workplace		10	3	7
	PC10.escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict		10	3	7
		Total	100	30	70