

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- Multi Skill Technician (Electrical)

SECTOR: ELECTRONICS

SUB-SECTOR: Consumer Electronics

OCCUPATION: Sales and After Sales Service

REFERENCE ID: ELE/Q3109

ALIGNED TO: NCO-2015/3113.0101

Brief Job Description: A Multi Skilled Technician (Electrical) is responsible for finding out and repairing faults in multiple small domestic Home Appliances. The individual installs the appliance and interacts with customers to diagnose the problem and possible causes, rectifies minor problems or replaces faulty modules for failed parts or recommends factory repairs. He/she will be typically employed by a corner Hardware/electrical repair shop, a micro or small enterprise as a "handyman" and eventually become an entrepreneur.

Personal Attributes: The job requires the individual to be self-motivated, Inquisitive and analytical. The individual must be willing to work in the field and travel through the day from one customer's premise to another. Punctuality, amenable behaviour, patience, good interpersonal relationship building, trustworthiness, integrity, and critical thinking are important attributes for this job.

Job Details

Qualifications Pack Code	ELE/Q3109		
Job Role	Multi Skill Technician (Electrical) (Applicable for National Scenarios)		
Credits	TBD	Version number	1.0
Sector	Electronics	Drafted on	22/10/16
Sub-sector	Consumer Electronics	Last reviewed on	19/04/17
Occupation	Sales and After Sales Service	Next review date	19/04/18
NSQC Clearance on	03/03/2017		

Job Role	Multi Skill Technician (Electrical)
Role Description	Finds out and repairs the fault of LED lights and home appliances like kettle, mixer, water purifier, cooler etc. Individual is skilled for entrepreneurship and MSMEs.
NSQF level	4
Minimum Educational Qualifications	8 th Standard pass, preferably
Maximum Educational Qualifications	NA
Training (Suggested but not mandatory)	NA
Minimum Job Entry Age	18 Years
Experience	NA
Applicable National Occupational Standards (NOS)	<p>Compulsory:</p> <ol style="list-style-type: none"> 1. ELE/N3101 Engage with customer for service 2. ELE/N9302 Diagnose and repair fault in LED Light 3. ELE/N3124 Repair small home appliances (Geyser & Fan) 4. ELE/N3118 Install the water purifier 5. ELE/N3119 Repair dysfunctional water purifier 6. ELE/N3120 Repair dysfunctional mixer/juicer/grinder 7. ELE/N9919 Work with superiors and colleagues 8. ELE/N9921 Follow safety standards 9. FIC/N9005 Developing Entrepreneurial Skills
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.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or an 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-function	Sub-functions are sub-activities essential to fulfil the 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 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 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	Knowledge and understanding 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.

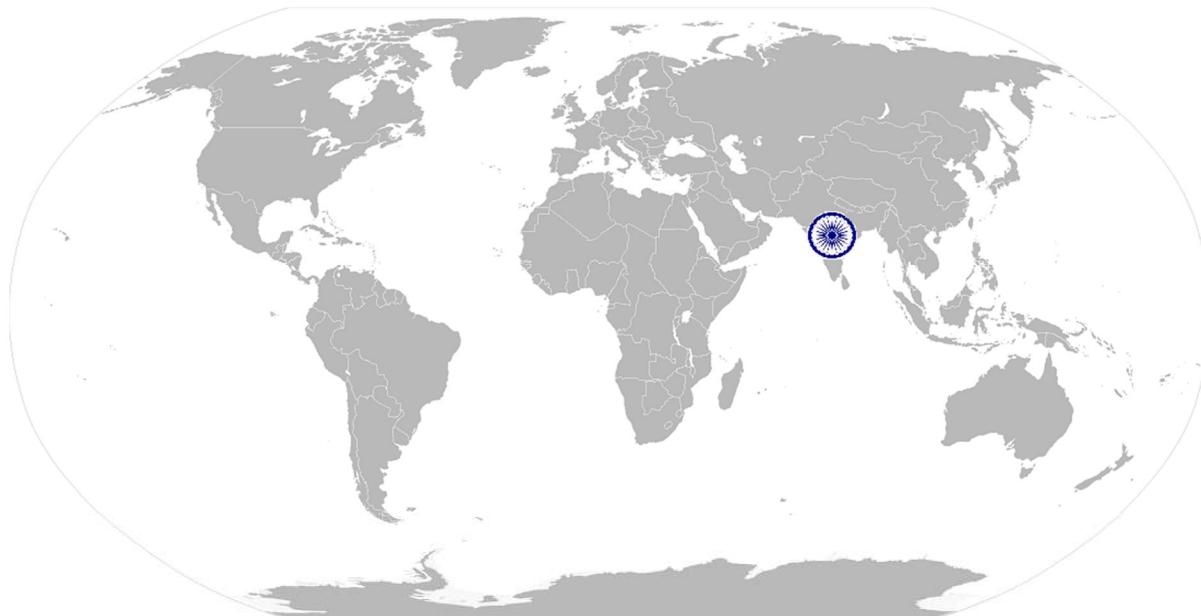
Acronyms

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. 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.
Keywords /Terms	Description
NOS	National Occupational Standard
NSQF	National Skill Qualification Framework
QP	Qualification Pack

ELE/N3101

Engage with customer for service

National Occupational Standard



Overview

This unit is about interacting with customers to understand their requirements and build confidence.

ELE/N3101

Engage with customer for service

National Occupational Standard

Unit Code	ELE/N3101
Unit Title (Task)	Engage with customer for service
Description	This OS unit is about interacting with customer to understand their requirement with respect to problem in the appliance.
Scope	<p>This unit/ task covers the following:</p> <ul style="list-style-type: none"> • Interact with the customer prior to visit • Interact with customer at their premises • Suggest possible solutions to customer • Achieve productivity and quality as per company's norms
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Interact with the customer prior to visit	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. check customer complaint registered at customer care or installation schedule</p> <p>PC2. call customer to confirm problem and fix time for visit</p> <p>PC3. greet the customer and confirm the problem registered</p> <p>PC4. be polite and patient when interacting with customer</p> <p>PC5. check about warranty status of appliance and annual maintenance contract</p> <p>PC6. anticipate possible problems to carry tools and parts accordingly</p> <p>PC7. ascertain customer location in order to make the route plan for the day</p>
Interact with customer at their premises	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC8. enquire about the symptoms and history of problems in the appliance</p> <p>PC9. ask about the age of appliance and status of upkeep</p> <p>PC10. identify the problem based on customer's information</p> <p>PC11. communicate the problems identified and educate on possible reasons</p> <p>PC12. inform about costs involved</p>
Suggest possible solutions to customer	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC13. discuss the problem(s) identified with customer</p> <p>PC14. suggest possible solutions and costs involved</p> <p>PC15. explain the time required and methodology for servicing necessary</p> <p>PC16. seek customer's approval on further action</p>
Achieve productivity and quality as per company's norms	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC17. accurately assess the problem and solution(s) necessary</p> <p>PC18. offer most appropriate and cost-effective service as per customer's requirement</p> <p>PC19. communicate problem effectively in order to secure customer's confidence</p> <p>PC20. ensure customer satisfaction and positive feedback</p> <p>PC21. record minimum customer complaints post service</p> <p>PC22. avoid repeat problem post service</p> <p>PC23. prepare most optimum route plan to complete daily target visits</p>

ELE/N3101

Engage with customer for service

Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company /organization and its processes)	The user/individual on the job needs to know and understand: KA1. company's policies on: customer care KA2. company's code of conduct KA3. organisation culture and typical customer profile KA4. company's reporting structure KA5. company's documentation policy
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. company's products and recurring problems reported in consumer appliances KB2. how to communicate with customers in order to put them at ease KB3. basic electrical and mechanical modules of various appliances KB4. electronics involved in the type of appliance KB5. models of different appliances and their common and distinguishing features KB6. functionality of different features of appliances and new features KB7. etiquette to be followed at customer's premises KB8. precautions to be taken while handling field calls and dealing with customers KB9. relevant reference sheets, manuals and documents to carry in the field KB10. importance of personal grooming KB11. how to be polite and courteous under all circumstances KB12. importance of maintaining clean surface/work area KB13. when to call customer care and close the call after work is done to customer's satisfaction and documentation is complete
Skills (S)	
A. Core Skills/ Generic Skills	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA1. complete forms such as work orders, invoices, maintenance records SA2. note problems on job sheet and details of work done <p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA3. read warnings, instructions and other text material on product labels, components, etc. SA4. read job sheets or work orders SA5. read product and module serial numbers and interpret details such as make, date, availability <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA6. receive and ask for clarifications from supervisor on the job requirement SA7. listen carefully to customer and interpret customer's statement of symptoms SA8. communicate in local language SA9. educate and inform customer about product, contractual issues such as warranty, cost of service and module replacement SA10. educate on precautions to be taken in order to avoid recurrence of problem

ELE/N3101

Engage with customer for service

B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. follow standard operating procedures while making decisions SB2. take approval from supervisor in case the decision has to be made for exceptions
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. work with supervisor and co-workers to achieve smooth workflow SB4. work with superiors and co-workers to share knowledge and learning
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB5. maintain personal grooming SB6. be polite, patient and courteous under all circumstances with all types of customers SB7. decide on the spot on whether interaction of customer with superior is necessary or not SB8. maintain proper etiquette including the appropriate physical distance with customer during conversation, not entering bedroom without permission SB9. put customer at ease and generate customer's confidence
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB10. seek inputs at assess the problems
	Analytical Thinking
	The user/ individual on the job needs to know and understand how to: SB11. interpret accurately drawings, wiring and job specifications/instructions
	Critical Thinking
	The user/ individual on the job needs to know and understand how to: SB12. improve work processes

ELE/N3101

Engage with customer for service

NOS Version Control

NOS Code		ELE/N3101	
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	07/11/13
Industry Sub-sector	Consumer Electronics	Last reviewed on	24/12/15
Occupation	Sales and After Sales Service	Next review date	23/12/16



ELE/N9302

Diagnose and repair fault in LED Light

National Occupational Standard



Overview

This unit is about diagnosing the fault in the non-functional LED Light and fixing it to make the light operational again.

ELE/N9302

Diagnose and repair fault in LED Light

National Occupational Standard

Unit Code	ELE/N9302
Unit Title (Task)	Diagnose and repair fault in LED Light
Description	This OS unit is about diagnosing the fault in the non-functional LED Light and mending it to make the light operational again.
Scope	<p>This unit/ task covers the following:</p> <ul style="list-style-type: none"> • Find and repair component-level fault • Find and repair LED strip-level fault • Achieve productivity and quality standards
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Find and repair component-level fault	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. connect the non-functional LED Light with the AC source and switch it on</p> <p>PC2. check that there is no loose, de-soldered wires and connections if the light does not switch on</p> <p>PC3. solder wires and make connections in case of loose, de-soldered wires and connections to make the light operational again</p> <p>PC4. dismantle the LED light if no loose, de-soldered wires and connections are found externally</p> <p>PC5. check the LED light engine with DC supply as per the voltage / current requirements of the product</p> <p>PC6. replace the LED light engine if it is found faulty</p> <p>PC7. check the supply unit with AC supply / multimeter to find out the voltage / current output in case LED light Engine is not found defective</p> <p>PC8. check voltage / current output at different sections of the supply unit with multimeter to find out its damaged section in case of no voltage / current output found in supply unit</p> <p>PC9. check the components with multimeter individually of the section where voltage output is found to be less than desired / no output</p> <p>PC10. repair / replace the damaged components / SMPs</p> <p>PC11. check output voltage/current of the supply unit again with multimeter</p> <p>PC12. reassemble the LED light if repaired / replaced supply unit is found okay</p>
Find and repair LED strip-level fault	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC13. connect the non-functional LED Light with the AC source and switch it on</p> <p>PC14. check how many LED strips are non-functional / damaged from the array of LED strips in the light</p> <p>PC15. remove the glass shell from the LED light</p> <p>PC16. replace the burnt out / damaged LED strips</p> <p>PC17. check the LED array after connecting it with AC source and switching it on</p> <p>PC18. replace the glass shell on the LED Light and close it if all the strips are found operational</p>

ELE/N9302

Diagnose and repair fault in LED Light

Achieve productivity and quality standards	To be competent, the user / individual on the job must be able to: PC19. correctly find the root cause of non-functional LED light and repair it in minimum possible time PC20. document the fault diagnosis and repair process as per SOP
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. company's policies on: incentives, testing & repairing standards and personnel management KA2. company's standard operating procedures and processes related to LED Luminary product testing and repair KA3. importance of the individual's role in the workflow KA4. reporting structure KA5. safety and quality standards followed in the organization
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. various electronic & electrical components, materials and their specific properties & usages KB2. basics of power electronics and its usages in lighting controls, or LED power supplies and LED drivers KB3. special safety and handling precautions to be taken during LED luminary testing KB4. 5S standards (sorting, setting, standardise, sustain, shining) + safety, security KB5. how to use multimeter, tester, LCR meter and power analyzer
Skills (S)	
A. Core Skills/ Generic Skills	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> SA1. complete forms such as work orders, invoices, maintenance records SA2. note problems on job sheet and details of work done
	<p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> SA3. read warnings, instructions and other text material on product labels, components, etc. SA4. read job sheets or work orders SA5. read product and module serial numbers and interpret details such as make, date, availability
	<p>Oral Communication (Listening and Speaking skills)</p> <p>The user/ individual on the job needs to know and understand how to:</p> SA6. receive and ask for clarifications from supervisor on the job requirement SA7. listen carefully to customer and interpret customer's statement of symptoms SA8. communicate in local language SA9. educate and inform customer about product, contractual issues such as warranty, cost of service and module replacement SA10. educate on precautions to be taken in order to avoid recurrence of problem
B. Professional Skills	Decision Making

ELE/N9302

Diagnose and repair fault in LED Light

<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB1. follow standard operating procedures while making decisions SB2. take approval from supervisor in case the decision has to be made for exceptions
<p>Plan and Organize</p>
<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB3. work with supervisor and co-workers to achieve smooth workflow SB4. work with superiors and co-workers to share knowledge and learning
<p>Customer Centricity</p>
<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB5. maintain personal grooming SB6. be polite, patient and courteous under all circumstances with all types of customers SB7. decide on the spot on whether interaction of customer with superior is necessary or not SB8. maintain proper etiquette including the appropriate physical distance with customer during conversation, not entering bedroom without permission SB9. put customer at ease and generate customer's confidence
<p>Problem Solving</p>
<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB10. seek inputs at assess the problems
<p>Analytical Thinking</p>
<p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB11. interpret accurately drawings, wiring and job specifications/instructions
<p>Critical Thinking</p>
<p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB12. improve work processes

ELE/N9302

Diagnose and repair fault in LED Light

NOS Version Control

NOS Code		ELE/N9302	
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	19/05/14
Industry Sub-sector	Consumer Electronics	Last reviewed on	24/06/15
Occupation	Sales and After Sales Service	Next review date	24/06/16



ELE/N3124

Repair small home appliances (Geyser & Fan)

National Occupational Standard



Overview

This OS unit is about understanding the customer's complaints, identifying the fault and fixing the Ceiling Fan / Geyser.

ELE/N3124

Repair small home appliances (Geyser & Fan)

National Occupational Standard

Unit Code	ELE/N3124
Unit Title (Task)	Repair small home appliances (Geyser & Fan)
Description	This OS unit is about understanding the customer's complaints, identifying the fault and fixing the Ceiling Fan / Geyser.
Scope	<p>This unit/ task covers the following:</p> <ul style="list-style-type: none"> • Understand the symptoms in the Ceiling Fan / Geyser and identify the fault • Complete the repairs by correcting the faults by replacing the dysfunctional component/module in the Ceiling Fan / Geyser • Confirm functionality of the repaired unit and post repair activities • Interact with & train technician • Achieve productivity & quality as per company's norms • Ensure safety at workplace

Performance Criteria(PC) w.r.t. the Scope

Element	Performance Criteria
Understand the symptoms in the Ceiling Fan / Geyser and identify the fault	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. understand the complete functioning of the Ceiling Fan / Geyser & manufacturer's recommendation(s) on the diagnostic & service procedures to be followed</p> <p>PC2. understand the possible fault (s) based on the symptoms observed & also reported by customer</p> <p>PC3. use a range of diagnostic documents – like service manual, circuit/wiring diagrams, fault analysis charts, flow charts – to investigate the fault</p> <p>PC4. use a range of tools & equipment to carry out the diagnostic tests to investigate the fault</p> <p>PC5. perform basic diagnostic tests to confirm that the power source is providing requisite inputs to the Ceiling Fan / Geyser & there are no fault with the same and there are no external faults like improper mounting etc.</p> <p>PC6. isolate the Ceiling Fan / Geyser / Geyser from the power source & disassemble the component(s) or module(s) from the Ceiling Fan / Geyser and perform the functional test(s) to confirm their working</p> <p>PC7. inform the superior if unable to follow the company guidelines and identify the fault</p>
Complete the repairs by correcting the faults by replacing the dysfunctional component/module in the Ceiling Fan / Geyser	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC8. test the basic electrical & electronic components using multi-meter</p> <p>PC9. check the mains outlet with a multi-meter for correct voltage output</p> <p>PC10. correct the minor external faults like loose connections, improper mounting</p> <p>PC11. educate the customer to get the major external faults like faulty or intermittent power</p>

ELE/N3124

Repair small home appliances (Geyser & Fan)

	<ul style="list-style-type: none"> PC12. replace the faulty component or module and re assemble the Ceiling Fan / Geyser PC13. take help from assistant/junior technician (if any) & train them about the repair process PC14. follow the company's guidelines in case the replacement component(s) or module(s) are not available or any such scenario PC15. update the supervisor & the customer in the above situation
Confirm functionality of the repaired unit and post repair activities	<p>To be competent, the user / individual on the job must be able to:</p> <ul style="list-style-type: none"> PC16. switch ON the power supply to the Ceiling Fan / Geyser and carry out the functionality test a per the service manual and confirm that it is working normally PC17. demonstrate and confirm the functionality of the Ceiling Fan / Geyser to the customer PC18. complete documentation procedures to record complaint closure, collect the applicable charges from the customer & provide receipt of the same as per company policies PC19. inform the customer about the repairs carried out, preventive care to be taken by them and the usage tips – if any and answer to the queries regarding the Ceiling Fan / Geyser or the faults politely to their satisfaction PC20. offer the recommended accessories & extended warranties/AMC to the customer – if available. PC21. clean the repair area of all the debris & dispose them with customer's permission PC22. collect the defective component(s) or module(s) & handover them to stores PC23. thank the customer for giving us a chance to serve them & request them to give a positive feedback PC24. inform the superior about the job closure
Interact with & train technician	<p>To be competent, the user / individual on the job must be able to:</p> <ul style="list-style-type: none"> PC25. interact with service technicians from time to time in-order to understand problems faced on the field PC26. educate junior level technicians about the commonly occurring problems, diagnosis procedures & customer handling
Achieve productivity & quality as per company's norms	<p>To be competent, the user / individual on the job must be able to:</p> <ul style="list-style-type: none"> PC27. diagnose the problem accurately and in short time PC28. identify the problem modules such as the motor, bush, bearing etc PC29. optimise the time taken to fix the dysfunctional Ceiling Fan / Geyser PC30. rectify to avoid the repeat fault in the Ceiling Fan / Geyser PC31. record minimum customer complaints post service PC32. select the right spares as per recorded complaints at the customer care PC33. educate customer on Ceiling Fan / Geyser maintenance to avoid problems in the future PC34. ensure damage free handling of the Ceiling Fan / Geyser PC35. achieve 100% customer satisfaction PC36. make sale of related products such as new equipment or AMC – as applicable

ELE/N3124

Repair small home appliances (Geyser & Fan)

Ensure safety at workplace	<p>To be competent, the user / individual on the job must be able to:</p> <ul style="list-style-type: none"> PC37. comply with health and safety, environmental and other relevant regulations and organizational guidelines at work PC38. adhere to procedures and guidelines for personal protective equipment (PPE) and other relevant safety regulations while performing the repair operations PC39. ensure work area is clean and safe from hazards PC40. ensure that all tools, equipment, power tool cables, extensions are in a safe and usable condition PC41. dispose of waste items in a safe and environmentally acceptable manner PC42. leave the work area in a safe condition and free from foreign object debris
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KA1. company's policies on: productivity, incentives, service delivery procedures, quality standard & personnel management and customer service standards relevant to the role KA2. company's sales and after sales support policy – installation, warranty terms, schedule of charges for post warranty jobs, applicable taxes, service documentation KA3. reporting structure, interdependent functions, lines & procedure in work area including the quality and productivity targets, incentive/penalty structure KA4. relevant health & safety equipment applicable in the workplace KA5. Importance of the individual's role in the workflow, responsibilities and sources for information pertaining to employment terms, entitlements, job roles and responsibilities KA6. escalation matrix and procedures for reporting work and employment related issues KA7. company's recommended accessories, extended warranty & AMC schemes for the Ceiling Fan / Geyser / Geyser – if any
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KB1. basic arithmetic calculations & units – measurement & multipliers KB2. basic knowledge electrical & electronic principles & their applications KB3. recommended tools & equipment – usage/handling instructions & safety precautions including the use of PPE (personal protective equipment) like hand gloves, type of ladder to be used, precautions while using ladder etc. KB4. the complete functioning of the Ceiling Fan / Geyser, operation sequence & recommended power inputs KB5. identification of basic electronic/mechanical components or modules in the Ceiling Fan / Geyser, their working & recommended test procedure KB6. electrical circuit diagram & mechanical assembly & instrumentation set of the Ceiling Fan / Geyser KB7. recommended installation procedure and its importance in optimum performance of the Ceiling Fan / Geyser KB8. functionality testing and demonstration of the Ceiling Fan / Geyser KB9. working of motor used in the Ceiling Fan / Geyser KB10. controlling the speed of fan with the regulator KB11. basic & advance troubleshooting knowledge of the Ceiling Fan / Geyser

ELE/N3124

Repair small home appliances (Geyser & Fan)

	<ul style="list-style-type: none"> KB12. frequently occurring faults of the Ceiling Fan / Geyser & their remedies/fixes KB13. the recommended procedure of disassembly & re assembly of the Ceiling Fan / Geyser KB14. specific safe working practices, breakdown service procedures KB15. hazards associated with breakdown service procedure & how to minimise them KB16. procedures for obtaining replacement parts, other material & consumable necessary for the service
Skills (S)	
A. Core Skills/ Generic Skills	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA1. complete forms such as work orders, invoices, maintenance records SA2. note problems on job sheet and details of work done <p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA3. read warnings, instructions and other text material on product labels, components, etc. SA4. read job sheets or work orders SA5. read product and module serial numbers and interpret details such as make, date, availability <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA6. receive and ask for clarifications from supervisor on the job requirement SA7. listen carefully to customer and interpret customer's statement of symptoms SA8. communicate in local language SA9. educate and inform customer about product, contractual issues such as warranty, cost of service and module replacement SA10. educate on precautions to be taken in order to avoid recurrence of problem
B. Professional Skills	<p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB1. follow standard operating procedures while making decisions SB2. take approval from supervisor in case the decision has to be made for exceptions <p>Plan and Organize</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB3. work with supervisor and co-workers to achieve smooth workflow SB4. work with superiors and co-workers to share knowledge and learning <p>Customer Centricity</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB5. maintain personal grooming SB6. be polite, patient and courteous under all circumstances with all types of customers

ELE/N3124

Repair small home appliances (Geyser & Fan)

- SB7. decide on the spot on whether interaction of customer with superior is necessary or not
- SB8. maintain proper etiquette including the appropriate physical distance with customer during conversation, not entering bedroom without permission
- SB9. put customer at ease and generate customer's confidence

Problem Solving

The user/individual on the job needs to know and understand how to:

- SB10. seek inputs at assess the problems

Analytical Thinking

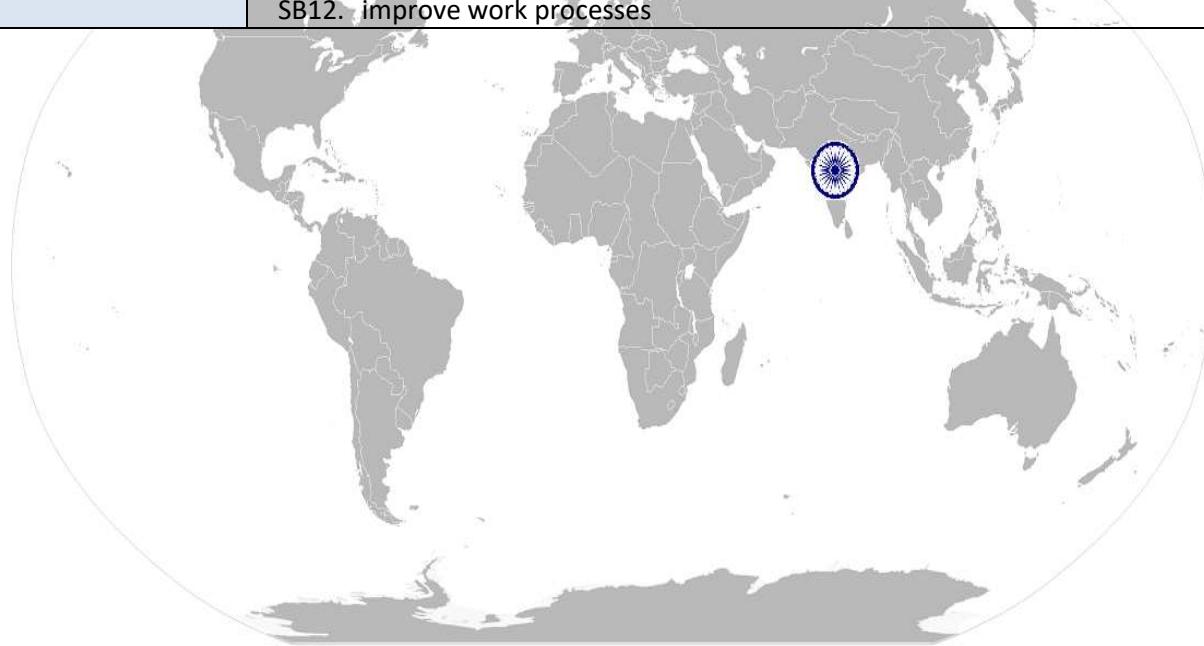
The user/ individual on the job needs to know and understand how to:

- SB11. interpret accurately drawings, wiring and job specifications/instructions

Critical Thinking

The user/ individual on the job needs to know and understand how to:

- SB12. improve work processes



ELE/N3124

Repair small home appliances (Geyser & Fan)

NOS Version Control

NOS Code	ELE/N3124		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	02/03/14
Industry Sub-sector	Consumer Electronics	Last reviewed on	24/03/15
Occupation	Sales and After Sales Service	Next review date	24/03/16



ELE/N3118

Install the water purifier

National Occupational Standard



Overview

This unit is about installing the newly-purchased water purifier at customer's premises.

ELE/N3118

Install the water purifier

National Occupational Standard

Unit Code	ELE/N3118
Unit Title (Task)	Install the water purifier
Description	This OS unit is about installing the newly purchased water purifier at customer's location and make it ready to use.
Scope	<p>This unit/ task covers the following:</p> <ul style="list-style-type: none"> • Undertake pre-installation site visit • Remove packaging and check accessories • Fix the water purifier at identified location • Check water purifier's functioning • Complete the documentation • Interact with supervisor or superior • Achieve productivity and quality as per company's norms
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Undertake pre-installation site visit	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. visit the customer's premise before carrying out the installation</p> <p>PC2. interact with the customer to understand whether the water purifier would be placed under the sink (UTS) or on the wall</p> <p>PC3. check that the location meets structural requirements such as distance from power supply, vicinity to plumbing point, etc.</p> <p>PC4. make the customer aware of any pre-installations/masonry/electrical work to be carried out and educate the customer about requirement of adequate water pressure at the inlet source</p> <p>PC5. make necessary markings for placement of the water purifier unit</p> <p>PC6. seek appointment for the next visit</p>
Remove packaging and check accessories	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC7. remove the packaging in which the purifier was shipped to customer from point of sale/ warehouse</p> <p>PC8. check that the product matches the customer order in terms of colour and make</p> <p>PC9. check that all supporting accessories purchased have are there in the pack</p> <p>PC10. check that tools and fitments required for the installation are available</p> <p>PC11. clear up the packaging material waste and dispose as per company's norms</p>
Fix the water purifier at identified location	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC12. check if pre-installation requirements are met</p> <p>PC13. make measurements at the location identified and drill holes ensuring no internal wiring damage takes place</p> <p>PC14. mount the filter and ensure that the screws are fastened securely</p> <p>PC15. drain the inlet line before connecting it to the water purifier</p> <p>PC16. connect the outlet pipe to the drain (if applicable)</p>

ELE/N3118

Install the water purifier

	PC17. connect the purifier to the nearest power supply point
Check water purifier's functioning	To be competent, the user / individual on the job must be able to: PC18. ensure that the filter is aligned as per instructions in the installation manual PC19. run the purifier and ensure there are no leaks at any point PC20. demonstrate the features and utility to the customer PC21. explain maintenance procedures to be followed while using the water purifier
Complete the documentation	To be competent, the user / individual on the job must be able to: PC22. fill in customer acknowledgement form PC23. seek customer's signature PC24. complete other documentation for recording completion of installation PC25. call customer care and inform about job completed
Interact with supervisor or superior	To be competent, the user / individual on the job must be able to: PC26. understand the work requirement from superior, periodically PC27. report to superior on the work completed PC28. escalate the customer issues and problems that are unresolved in the field PC29. document the work completed on the company ERP software for tracking and future references
Achieve productivity and quality as per company's norms	To be competent, the user / individual on the job must be able to: PC30. remove packaging without damage to the water purifier unit and accessories PC31. position the water filter as per requirements specified in instructions manual PC32. educate customer on importance of proper placing PC33. carry and use the correct tools and equipment for installation PC34. operate and check that they are in a safe and stable condition PC35. complete installation in time target given PC36. educate customer on proper operation and maintenance procedures PC37. complete daily field schedule as per instructions/format within the designated time
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. company's policies on: incentives, delivery standards, and personnel management, call closure KA2. company's sales, installation and after sales support policy KA3. importance of the individual's role in the workflow KA4. reporting structure KA5. company's policy on product's warranty and other terms and conditions
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. installation site requirements (structural requirements, plumbing etc.) KB2. water flow diagram and electrical circuit diagram of the Water Purifier KB3. water purification process and different layers of filter present within the unit such as sediment filter, carbon block filter, TFC/TFM membrane, inline carbon filter etc. KB4. different technologies in water purification (such as reverse osmosis, de ionisation etc.) KB5. different features and functionalities of various models KB6. safety precautions to be taken while installing

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Install the water purifier

	<ul style="list-style-type: none"> KB7. manual-based procedure of installing the water purifier KB8. packaging waste disposal procedures KB9. other products of the company KB10. safety rules, policies and procedures KB11. quality standards to be followed KB12. the water flows through various switches, valves and different layers of filter KB13. how to operate the water purifier and use the various features KB14. how to fix various accessories and parts that have accompanied the unit KB15. how to check features and functionalities after installation KB16. how to operate tools such as electric drill, screw drivers, wrenches, tube cutters/benders, spanners, etc. KB17. how to make appropriate settings after plugging in
Skills (S)	
A. Core Skills/ Generic Skills	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA1. complete forms such as work orders, invoices, maintenance records SA2. note problems on job sheet and details of work done <p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA3. read warnings, instructions and other text material on product labels, components, etc. SA4. read job sheets or work orders SA5. read product and module serial numbers and interpret details such as make, date, availability <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA6. receive and ask for clarifications from supervisor on the job requirement SA7. listen carefully to customer and interpret customer's statement of symptoms SA8. communicate in local language SA9. educate and inform customer about product, contractual issues such as warranty, cost of service and module replacement SA10. educate on precautions to be taken in order to avoid recurrence of problem
B. Professional Skills	<p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB1. follow standard operating procedures while making decisions SB2. take approval from supervisor in case the decision has to be made for exceptions <p>Plan and Organize</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB3. work with supervisor and co-workers to achieve smooth workflow SB4. work with superiors and co-workers to share knowledge and learning <p>Customer Centricity</p> <p>The user/individual on the job needs to know and understand how to:</p>

ELE/N3118

Install the water purifier

- SB5. maintain personal grooming
- SB6. be polite, patient and courteous under all circumstances with all types of customers
- SB7. decide on the spot on whether interaction of customer with superior is necessary or not
- SB8. maintain proper etiquette including the appropriate physical distance with customer during conversation, not entering bedroom without permission
- SB9. put customer at ease and generate customer's confidence

Problem Solving

The user/individual on the job needs to know and understand how to:

- SB10. seek inputs at assess the problems

Analytical Thinking

The user/ individual on the job needs to know and understand how to:

- SB11. interpret accurately drawings, wiring and job specifications/instructions

Critical Thinking

The user/ individual on the job needs to know and understand how to:

- SB12. improve work processes

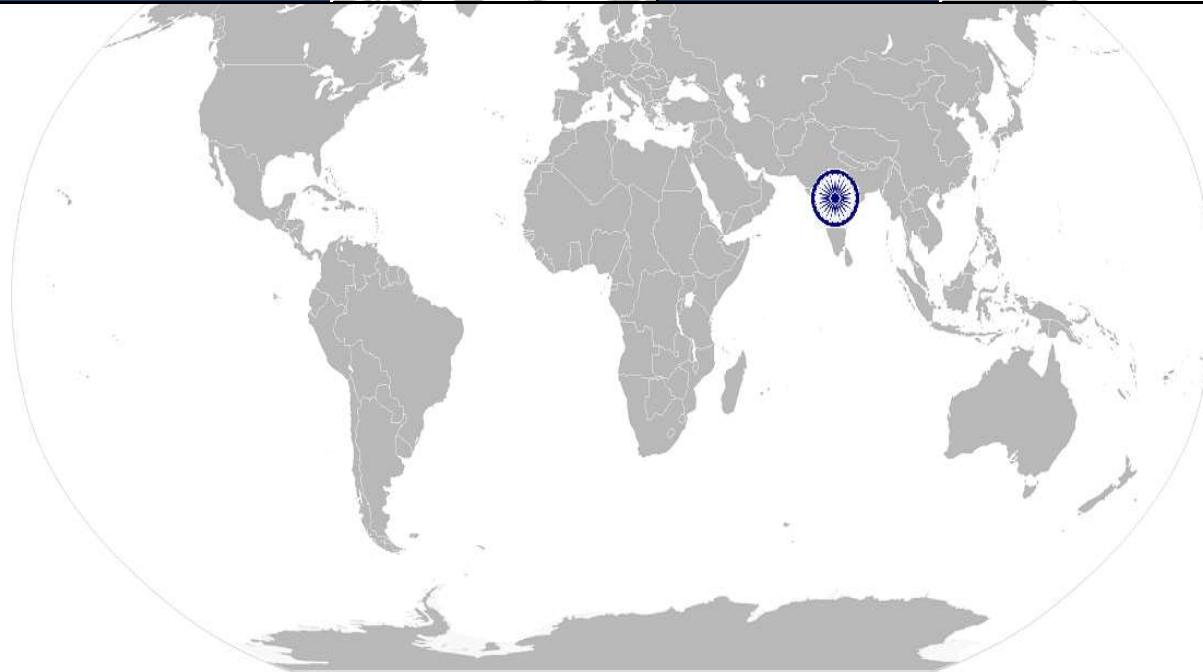


ELE/N3118

Install the water purifier

NOS Version Control

NOS Code	ELE/N3118		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	18/02/14
Industry Sub-sector	Consumer Electronics	Last reviewed on	24/03/15
Occupation	Sales and After Sales Service	Next review date	24/03/16



ELE/N3119

Repair dysfunctional water purifier

National Occupational Standard



Overview

This unit is about moving from one customer's premise to another in order to rectify faults in dysfunctional water purifier as recorded by the customer with customer care unit.

ELE/N3119

Repair dysfunctional water purifier

National Occupational Standard

Unit Code	ELE/N3119
Unit Title (Task)	Repair dysfunctional water purifier
Description	This OS unit is about understanding the customer's complaints, identifying the fault and fixing the water purifier.
Scope	<p>This unit/ task covers the following:</p> <ul style="list-style-type: none"> • Understand the symptoms in the water purifier and identify the fault • Replace dysfunctional part in the water purifier unit • Confirm functionality of the repaired unit • Achieve productivity and quality as per company's norms
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Understand the symptoms in the water purifier and identify the fault	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. diagnose the fault based on customer interaction and initial inspection</p> <p>PC2. check if the water pressure is as specified by company standards</p> <p>PC3. shut off the system by turning off water supply and unplug the unit</p> <p>PC4. place a piece of cloth or towel under the unit in order to avoid any water spills on the floor</p> <p>PC5. carry out basic inspection of feed water valve, tank valve, tubing, housing etc.</p> <p>PC6. separate and inspect every part of the unit if the fault is not identified through basic inspection</p> <p>PC7. send to factory for in depth diagnosis, if problem remains un-identified at site</p>
Replace dysfunctional part in the water purifier unit	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC8. replace component at location, if the fault identified is because of damage of components such as valves or wearing out of membrane or filter</p> <p>PC9. remove and replace the faulty module with a functional one, either on a second visit or as pre-identified and collected from the service centre, if the problem is at the PCB level or components that cannot be replaced at site</p>
Confirm functionality of the repaired unit	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC10. reassemble the unit</p> <p>PC11. start supply of water to the unit and confirm that unit is functioning</p> <p>PC12. check that all the modules of the unit work as per specifications</p> <p>PC13. demonstrate and confirm functionality of the unit with customer</p> <p>PC14. educate the customer about cleaning procedures and other best practices</p> <p>PC15. collect necessary payments from the customer, if applicable</p> <p>PC16. fill in customer acknowledgement form</p> <p>PC17. complete other documentation procedures to record complaint closure</p>
Achieve productivity and quality as per company's norms	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC18. ensure damage free handling of the unit</p> <p>PC19. diagnose the problem accurately and in assigned time</p> <p>PC20. identify the problem modules accurately such as inlet valve, auto shut off</p>

ELE/N3119

Repair dysfunctional water purifier

	<p>valve, saddle valve, housing, O ring, PCB</p> <p>PC21. fix the dysfunctional water purifier in designated time</p> <p>PC22. rectify completely to avoid repeat fault in the water purifier</p> <p>PC23. record minimum customer complaints post service</p> <p>PC24. meet daily target on attending to number of complaints</p> <p>PC25. select the right spares according to recorded complaints at the customer care</p> <p>PC26. clearly communicate type of module required to the service centre, if a faulty module is to be replaced</p> <p>PC27. secure repairs completion receipt from customer</p> <p>PC28. educate customer on water purifier maintenance and correct practices to follow in order to avoid further problems</p> <p>PC29. ensure 100% customer satisfaction</p> <p>PC30. recover payments as per rate sheet/ communication from customer care</p> <p>PC31. sell related products such as new equipment or Annual Maintenance Contracts (AMC) as per company policy</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KA1. company's policies on: incentives, delivery standards and personnel management and customer service standards KA2. reporting and documentation processes KA3. water purifier manufacturing capabilities of the organization KA4. importance of the individual's role in the system KA5. reporting structure
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <ul style="list-style-type: none"> KB1. water flow diagram and electrical circuit diagram of the Water Purifier KB2. water purification process and different layers of filter present within the unit such as sediment filter, carbon block filter, TFC/TFM membrane, inline carbon filter etc. KB3. different technologies in water purification (such as reverse osmosis etc.) KB4. parameters such as production rate, water chemistry, drain rate, input water pressure/temperature etc. KB5. different types of water purifiers manufactured by the company KB6. features of different water purifier models of the company KB7. functioning of the Water Purifier and its various filters KB8. basic electronics (knowledge of components such as diode, transformer, LED, photo transistor, capacitor, resistor, inductor, thermistor, ICs KB9. chemical and other properties of various filters of the Water Purifier KB10. fundamentals of electricity such as ohms law, difference between ac and dc, calculation of energy consumption of Water Purifiers, understanding of domestic wiring, understanding of series and parallel connections KB11. troubleshooting knowledge with respect to water purifiers KB12. hazards, their causes and prevention/personal safety KB13. frequently occurring faults such as low/no water production, leaks, bad tasting water etc. KB14. components/modules of the water purifier and their prices KB15. other products of the company

ELE/N3119

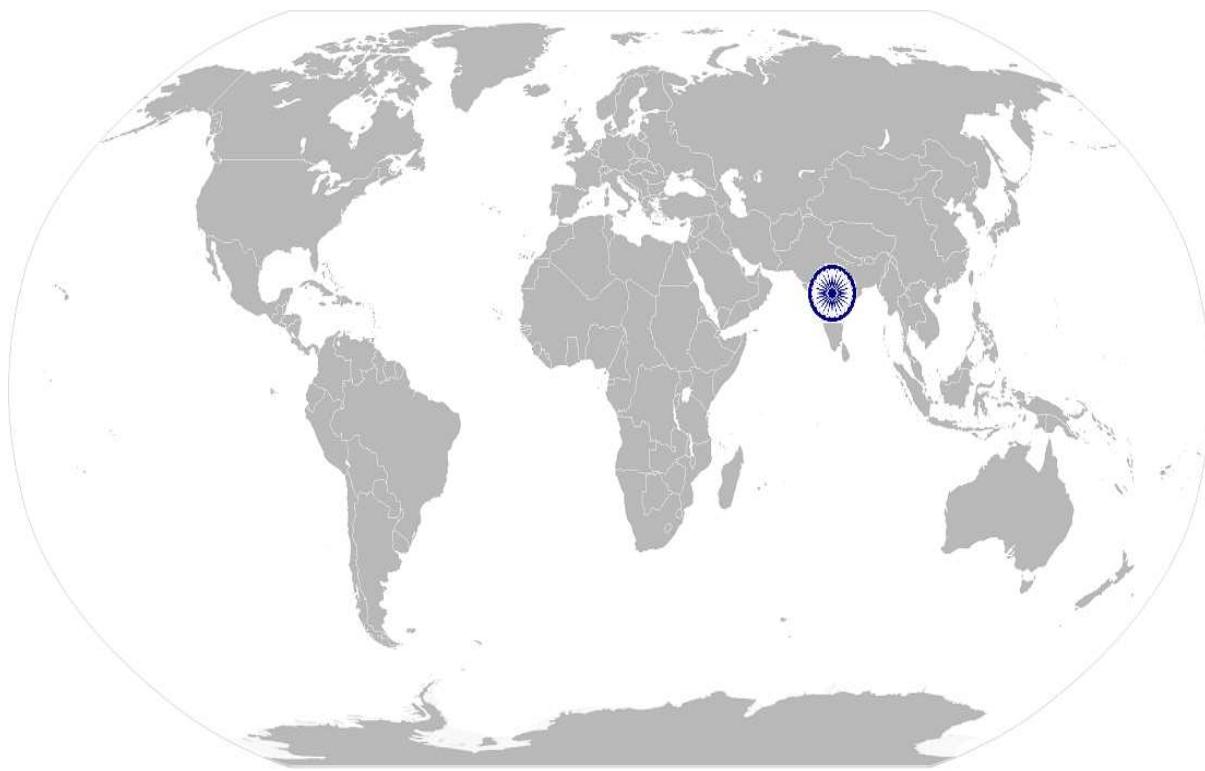
Repair dysfunctional water purifier

Skills (S)	
A. Core Skills/ Generic Skills	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA1. complete forms such as work orders, invoices, maintenance records SA2. note problems on job sheet and details of work done <p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA3. read warnings, instructions and other text material on product labels, components, etc. SA4. read job sheets or work orders SA5. read product and module serial numbers and interpret details such as make, date, availability <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA6. receive and ask for clarifications from supervisor on the job requirement SA7. listen carefully to customer and interpret customer's statement of symptoms SA8. communicate in local language SA9. educate and inform customer about product, contractual issues such as warranty, cost of service and module replacement SA10. educate on precautions to be taken in order to avoid recurrence of problem
B. Professional Skills	<p>Decision Making</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB1. follow standard operating procedures while making decisions SB2. take approval from supervisor in case the decision has to be made for exceptions <p>Plan and Organize</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB3. work with supervisor and co-workers to achieve smooth workflow SB4. work with superiors and co-workers to share knowledge and learning <p>Customer Centricity</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB5. maintain personal grooming SB6. be polite, patient and courteous under all circumstances with all types of customers SB7. decide on the spot on whether interaction of customer with superior is necessary or not SB8. maintain proper etiquette including the appropriate physical distance with customer during conversation, not entering bedroom without permission SB9. put customer at ease and generate customer's confidence <p>Problem Solving</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB10. seek inputs at assess the problems

ELE/N3119

Repair dysfunctional water purifier

	Analytical Thinking
	The user/ individual on the job needs to know and understand how to: SB11. interpret accurately drawings, wiring and job specifications/instructions
	Critical Thinking
	The user/ individual on the job needs to know and understand how to: SB12. improve work processes



ELE/N3119

Repair dysfunctional water purifier

NOS Version Control

NOS Code	ELE/N3119		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	18/02/14
Industry Sub-sector	Consumer Electronics	Last reviewed on	24/03/15
Occupation	Sales and After Sales Service	Next review date	24/03/16



ELE/N3120

Repair dysfunctional mixer/juicer/grinder

National Occupational Standard



Overview

This unit is about moving from one customer's premise to another in order to rectify faults in small appliances such as mixers, juicers, grinders as recorded by the customer with customer care unit.

ELE/N3120

Repair dysfunctional mixer/juicer/grinder

National Occupational Standard

Unit Code	ELE/N3120
Unit Title (Task)	Repair dysfunctional mixer/juicer/grinder
Description	This OS unit is about understanding the customer's complaints, identifying the fault and fixing the mixer/juicer/grinder.
Scope	<p>This unit/ task covers the following:</p> <ul style="list-style-type: none"> • Understand the symptoms in the appliance and identify the fault • Replace dysfunctional part of the small appliance • Confirm functionality of the repaired unit • Achieve productivity and quality as per company's norms
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Understand the symptoms in the appliance and identify the fault	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. understand usage pattern of the mixer/grinder from the customer</p> <p>PC2. diagnose the fault based on customer interaction and initial inspection</p> <p>PC3. unplug the unit, turn overload switch back to original position if the appliance turned off due to overload</p> <p>PC4. carry out basic tests such as power supply inspection, volt ampere test and earth test power supply</p> <p>PC5. separate and inspect every module of the unit if the fault is not identified through basic tests</p> <p>PC6. send to factory for in depth diagnosis, if problem remains un-identified at site</p>
Replace dysfunctional part of the small appliance	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC7. replace component at location, if the fault identified is because of damage of components such as relay or thermostat</p> <p>PC8. remove and replace the faulty module with a functional one, either on a second visit or as pre-identified and collected from the service centre, if the problem is at the PCB level or components that cannot be replaced at site</p>
Confirm functionality of the repaired unit	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC9. reassemble the unit</p> <p>PC10. switch on power supply and confirm that unit is functioning</p> <p>PC11. demonstrate and confirm functionality of the unit with customer</p> <p>PC12. educate the customer about cleaning procedures, using different jars for different purposes and other best practices</p> <p>PC13. collect necessary payments from the customer, if applicable</p> <p>PC14. fill in customer acknowledgement form</p> <p>PC15. complete other documentation procedures to record complaint closure</p>
Achieve productivity and quality as per company's norms	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC16. ensure damage free handling of the unit</p> <p>PC17. diagnose the problem accurately and in assigned time</p>

ELE/N3120

Repair dysfunctional mixer/juicer/grinder

	<ul style="list-style-type: none"> PC18. identify the problem modules accurately such as the power supply, overload circuit breaker, motors, PCB PC19. fix the dysfunctional appliance in designated time PC20. rectify completely to avoid repeat fault in the appliance PC21. record minimum customer complaints post service PC22. meet daily target on attending to number of complaints PC23. select the right spares according to recorded complaints at the customer care PC24. clearly communicate type of module required to the service centre, if a faulty module is to be replaced PC25. secure repairs completion receipt from customer PC26. educate customer on maintenance and correct practices to follow in order to avoid further problems PC27. ensure 100% customer satisfaction PC28. recover payments as per rate sheet/ communication from customer care PC29. sell related products such as new equipment or Annual Maintenance Contracts (AMC) as per company policy
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Knowledge and Understanding (K)

A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> KA1. company's policies on: incentives, delivery standards and personnel management and customer service standards KA2. reporting and documentation processes KA3. importance of the individual's role in the system KA4. reporting structure
B. Technical Knowledge	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> KB1. different models of mixers, grinders and their features and functionalities KB2. functioning of the appliance and its various modules KB3. basic electrical fundamentals with regard to functioning of motors, circuit breakers, etc. KB4. basic electronics (knowledge of components such as diode, transformer, LED, photo transistor, capacitor, resistor, inductor, thermistor, ICs KB5. functioning of various electromechanical parts of the mixer/grinder KB6. fundamentals of electricity such as ohms law, difference between ac and dc, calculation of energy consumption of appliances, understanding of domestic wiring, understanding of series and parallel connections KB7. troubleshooting knowledge with respect to small home appliances KB8. hazards, their causes and prevention/personal safety KB9. frequently occurring faults such as abnormal noise during use, jars overflowing, jar leaking etc. KB10. components/modules of different small home appliances and their prices KB11. energy ratings such BEE rating and concepts of e waste KB12. other products of the company

Skills (S)

A. Core Skills/	Writing Skills
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ELE/N3120

Repair dysfunctional mixer/juicer/grinder

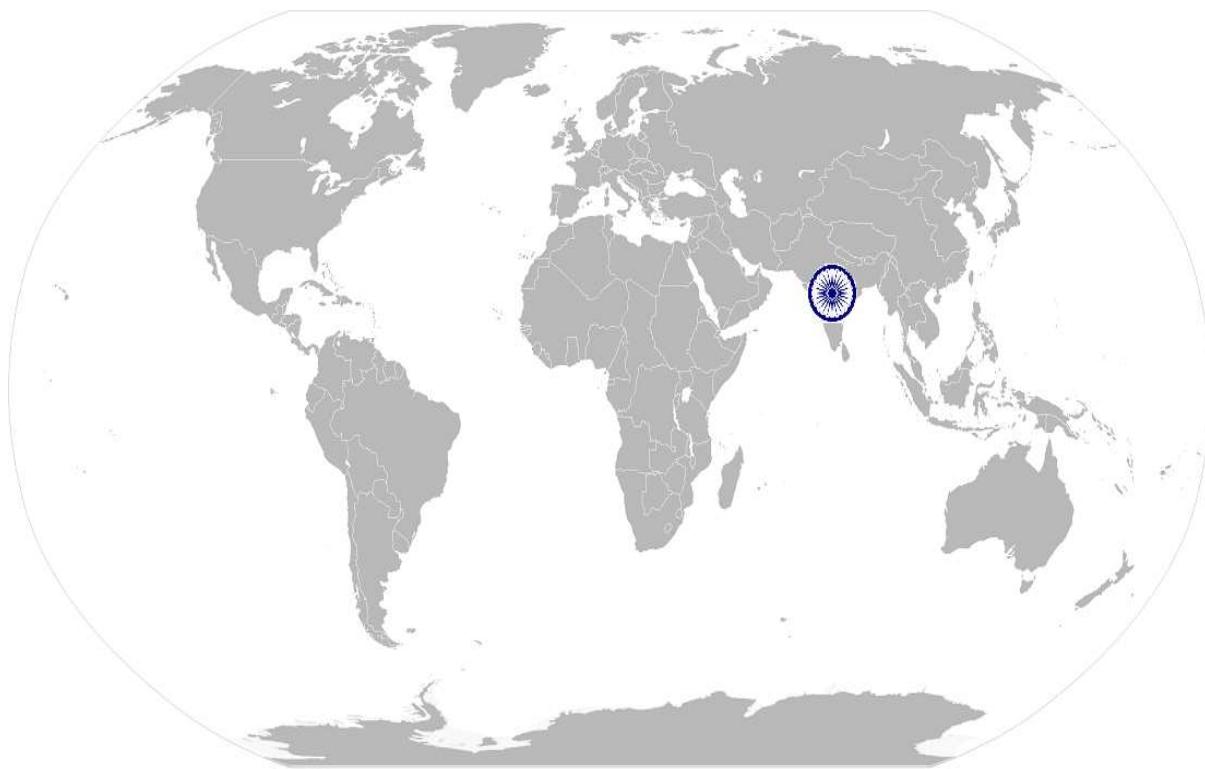
Generic Skills	The user/ individual on the job needs to know and understand how to: SA1. complete forms such as work orders, invoices, maintenance records SA2. note problems on job sheet and details of work done
	Reading Skills
	The user/ individual on the job needs to know and understand how to: SA3. read warnings, instructions and other text material on product labels, components, etc. SA4. read job sheets or work orders SA5. read product and module serial numbers and interpret details such as make, date, availability
	Oral Communication (Listening and Speaking skills)
	The user/ individual on the job needs to know and understand how to: SA6. receive and ask for clarifications from supervisor on the job requirement SA7. listen carefully to customer and interpret customer's statement of symptoms SA8. communicate in local language SA9. educate and inform customer about product, contractual issues such as warranty, cost of service and module replacement SA10. educate on precautions to be taken in order to avoid recurrence of problem
	B. Professional Skills
	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. follow standard operating procedures while making decisions SB2. take approval from supervisor in case the decision has to be made for exceptions
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. work with supervisor and co-workers to achieve smooth workflow SB4. work with superiors and co-workers to share knowledge and learning
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB5. maintain personal grooming SB6. be polite, patient and courteous under all circumstances with all types of customers SB7. decide on the spot on whether interaction of customer with superior is necessary or not SB8. maintain proper etiquette including the appropriate physical distance with customer during conversation, not entering bedroom without permission SB9. put customer at ease and generate customer's confidence
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB10. seek inputs at assess the problems
	Analytical Thinking
	The user/ individual on the job needs to know and understand how to: SB11. interpret accurately drawings, wiring and job specifications/instructions

ELE/N3120

Repair dysfunctional mixer/juicer/grinder

Critical Thinking

The user/ individual on the job needs to know and understand how to:
SB12. improve work processes



ELE/N3120

Repair dysfunctional mixer/juicer/grinder

NOS Version Control

NOS Code	ELE/N3120		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	18/02/14
Industry Sub-sector	Consumer Electronics	Last reviewed on	24/03/14
Occupation	Sales and After Sales Service	Next review date	24/03/15



ELE/N9919

Work with superiors and colleagues

National Occupational Standard



Overview

This unit is about the individual's level of communication with colleagues and other departments within the organisation. It determines the ability to work as a team member to achieve the required deliverables on schedule.

ELE/N9919

Work with superiors and colleagues

National Occupational Standard

Unit Code	ELE/N9919
Unit Title (Task)	Work with superiors and colleagues
Description	This OS unit is about communicating, coordinating and maintaining proper relationship with colleagues and seniors in order to achieve smooth work flow.
Scope	<p>This unit/ task covers the following:</p> <ul style="list-style-type: none"> • Interact with supervisor or superior • Coordinate with colleagues
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Interact with supervisor or superior	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. understand work requirements by receiving instructions from reporting supervisor</p> <p>PC2. understand standard operating procedure of the company</p> <p>PC3. escalate problems that cannot be handled including repetitive PCB defects, machine failures, potential hazards, process disruptions, repairs and maintenance of machine</p> <p>PC4. report work completed and receive feedback on work done</p> <p>PC5. resolve personnel issues</p> <p>PC6. rectify errors as per feedback and minimize mistakes to zero in future</p> <p>PC7. communicate about process flow improvements, quality of output, product defects received from previous process, repairs and maintenance of tools and machinery as required and find technical solutions on specific issues</p> <p>PC8. handover completed work and deliver the work of expected quality despite constraints</p>
Coordinate with colleagues	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC9. collect required spares and raw materials from tool room or stores</p> <p>PC10. deposit unused or faulty materials, parts and tools to stores</p> <p>PC11. assist colleagues where necessary and as per capability</p> <p>PC12. resolve conflicts with colleagues at work to achieve smooth workflow</p> <p>PC13. complete rework in time based on feedback from quality or process departments</p> <p>PC14. put team over individual goals</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. company's policies on: incentives, delivery standards, and personnel management</p> <p>KA2. work flow involved in company's process</p> <p>KA3. importance of the individual's role in the workflow</p> <p>KA4. reporting structure</p>

ELE/N9919

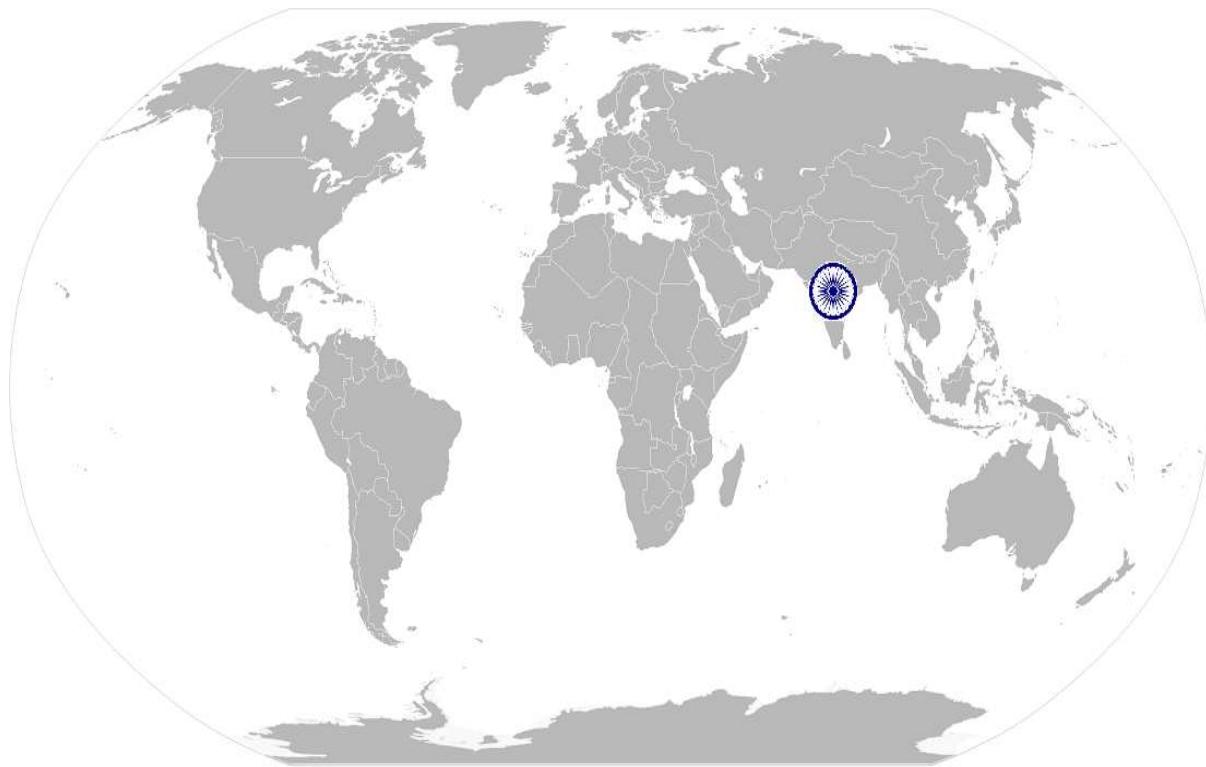
Work with superiors and colleagues

B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. how to communicate effectively KB2. how to build team coordination
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills The user/ individual on the job needs to know and understand how to: SA1. complete forms such as work orders, invoices, maintenance records SA2. note problems on job sheet and details of work done
	Reading Skills The user/ individual on the job needs to know and understand how to: SA3. read warnings, instructions and other text material on product labels, components, etc. SA4. read job sheets or work orders SA5. read product and module serial numbers and interpret details such as make, date, availability
	Oral Communication (Listening and Speaking skills) The user/ individual on the job needs to know and understand how to: SA6. receive and ask for clarifications from supervisor on the job requirement SA7. listen carefully to customer and interpret customer's statement of symptoms SA8. communicate in local language SA9. educate and inform customer about product, contractual issues such as warranty, cost of service and module replacement SA10. educate on precautions to be taken in order to avoid recurrence of problem
B. Professional Skills	Decision Making The user/individual on the job needs to know and understand how to: SB1. follow standard operating procedures while making decisions SB2. take approval from supervisor in case the decision has to be made for exceptions
	Plan and Organize The user/individual on the job needs to know and understand how to: SB3. work with supervisor and co-workers to achieve smooth workflow SB4. work with superiors and co-workers to share knowledge and learning
	Customer Centricity The user/individual on the job needs to know and understand how to: SB5. maintain personal grooming SB6. be polite, patient and courteous under all circumstances with all types of customers SB7. decide on the spot on whether interaction of customer with superior is necessary or not SB8. maintain proper etiquette including the appropriate physical distance with customer during conversation, not entering bedroom without permission SB9. put customer at ease and generate customer's confidence

ELE/N9919

Work with superiors and colleagues

	Problem Solving
	The user/individual on the job needs to know and understand how to: SB10. seek inputs at assess the problems
	Analytical Thinking
	The user/ individual on the job needs to know and understand how to: SB11. interpret accurately drawings, wiring and job specifications/instructions
Critical Thinking	
The user/ individual on the job needs to know and understand how to: SB12. improve work processes	



ELE/N9919

Work with superiors and colleagues

NOS Version Control

NOS Code	ELE/N9919		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	11/02/14
Industry Sub-sector	Consumer Electronics	Last reviewed on	24/03/15
Occupation	Sales and After Sales Service	Next review date	24/03/16



ELE/N9921

Follow safety standards

National Occupational Standard



Overview

This unit is about the worker's commitment towards reporting potential hazards and containing accidents in order to make the work environment safe, healthy and secure, for self and colleagues.

ELE/N9921

Follow safety standards

National Occupational Standard	
Unit Code	ELE/N9921
Unit Title (Task)	Follow safety standards
Description	This OS unit is about following safety procedures, communicating potential hazards and dangers of accidents on the job.
Scope	<p>This unit/ task covers the following:</p> <ul style="list-style-type: none"> • Understand potential sources of accidents • Use safety gear to avoid accidents • Understand the safety procedures followed by the company • Follow daily safety measure • Communicate to supervisor
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Understand potential sources of accidents	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. spot and report potential hazards on time</p> <p>PC2. follow company policy and rules regarding hazardous materials</p> <p>PC3. avoid accidents related to use of potentially dangerous chemicals, gases, sharp tools and hazards from machines which involves exposure to possible injuries such as cuts, bites, stings, minor burns, etc.</p> <p>PC4. handle with care when using an electrical drill and sharp cutting objects</p>
Use safety gear to avoid accidents	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC5. understand which safety gear must be used for a particular task</p> <p>PC6. eye, respiratory and hearing protection as per company policy</p> <p>PC7. use safety gear such as respirator, mask, skull caps, gloves, goggles, jacket, etc., as prescribed for the job</p>
Understand the safety procedures followed by the company	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC8. comply with standard health and safety procedure followed in the company while handling an equipment and hazardous materials and tools or situations</p> <p>PC9. understand and follow the evacuation procedure properly such as fire drills, emergency evacuation procedures, first aid to self and others, etc., which help in case of an emergency</p>
Follow daily safety measure	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC10. take adequate safety measures while on work to prevent accidents</p> <p>PC11. ensure zero accidents in work</p> <p>PC12. avoid damage of components due to negligence in ESD procedures</p> <p>PC13. ensure no loss for company due to safety negligence</p> <p>PC14. ensure proper machine maintenance, work process achieving quality outputs as per the company standard</p>
Communicate to supervisor	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC15. improve process flow to reduce anticipated or repetitive hazards</p> <p>PC16. report on mishandling of tools, machines or hazardous materials and on</p>

ELE/N9921

Follow safety standards

	<p>electrical problems that could result in accident</p> <p>PC17. escalate about any hazardous materials or things found in the premises</p> <p>PC18. report about any breach of safety procedure in the company</p> <p>PC19. follow electrostatic discharge (ESD) measures for electronic component safety</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. company's policies on handling: harmful chemicals and sharp tools, safety and hazards of machines, fire safety/drill, first aid and, disposal of harmful chemicals and materials, quality standards</p> <p>KA2. company occupational safety and health policy followed</p> <p>KA3. company emergency evacuation procedure</p> <p>KA4. company's medical policy</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:-</p> <p>KB1. how to maintain the work area safe and secure</p> <p>KB2. how to handle hazardous material</p> <p>KB3. how to follow safety procedures while operating hazardous tools and equipment</p> <p>KB4. emergency procedures to be followed such as fire accidents and fire safety education</p> <p>KB5. how to use machines and tools without causing bodily harm</p> <p>KB6. first aid execution</p> <p>KB7. disposal of hazardous chemicals, tools and materials by following prescribed environmental norms or as per company policy</p>
Skills (S)	
A. Core Skills/ Generic Skills	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. complete forms such as work orders, invoices, maintenance records</p> <p>SA2. note problems on job sheet and details of work done</p> <p>Reading Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <p>SA3. read warnings, instructions and other text material on product labels, components, etc.</p> <p>SA4. read job sheets or work orders</p> <p>SA5. read product and module serial numbers and interpret details such as make, date, availability</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>SA6. receive and ask for clarifications from supervisor on the job requirement</p> <p>SA7. listen carefully to customer and interpret customer's statement of symptoms</p> <p>SA8. communicate in local language</p> <p>SA9. educate and inform customer about product, contractual issues such as warranty, cost of service and module replacement</p> <p>SA10. educate on precautions to be taken in order to avoid recurrence of problem</p>

ELE/N9921

Follow safety standards

B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. follow standard operating procedures while making decisions SB2. take approval from supervisor in case the decision has to be made for exceptions
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. work with supervisor and co-workers to achieve smooth workflow SB4. work with superiors and co-workers to share knowledge and learning
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB5. maintain personal grooming SB6. be polite, patient and courteous under all circumstances with all types of customers SB7. decide on the spot on whether interaction of customer with superior is necessary or not SB8. maintain proper etiquette including the appropriate physical distance with customer during conversation, not entering bedroom without permission SB9. put customer at ease and generate customer's confidence
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB10. seek inputs at assess the problems
	Analytical Thinking
	The user/ individual on the job needs to know and understand how to: SB11. interpret accurately drawings, wiring and job specifications/instructions
	Critical Thinking
	The user/ individual on the job needs to know and understand how to: SB12. improve work processes

ELE/N9921

Follow safety standards

NOS Version Control

NOS Code	ELE/N9921		
Credits	TBD	Version number	1.0
Industry	Electronics	Drafted on	07/03/14
Industry Sub-sector	Consumer Electronics	Last reviewed on	24/03/15
Occupation	Sales and After Sales Service	Next review date	24/03/16



National Occupational Standard



Overview

This OS unit is about evaluating an opportunity and developing entrepreneurial skills

Unit Code	FIC/N9005
Unit Title (Task)	Developing entrepreneurial skills
Description	This OS unit is about evaluating an opportunity and developing entrepreneurial skills
Scope	
<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Evaluating an opportunity before starting a micro-enterprise • Setting up an enterprise 	
Performance Criteria(PC) w.r.t. the Scope	
Element	Performance Criteria
Evaluating an opportunity before starting a micro-enterprise	<p>To be competent, the user/individual must be able to:</p> <p>PC1. identify gaps in markets for different products/services</p> <p>PC2. identify the customer needs for different products/services</p> <p>PC3. identify different features of products/services to be marketed</p> <p>PC4. identify the cheap and regular sources of supply for raw materials</p> <p>PC5. determine the pricing of the products depending upon competitive businesses</p> <p>PC6. identify various mediums (online/offline) to sell products/services to target such as customers such as blogs, personal websites, e-commerce portals, exhibitions, stalls, etc.</p> <p>PC7. identify different sources of loans/funds and the formalities to raise the same</p> <p>PC8. understand basic government rules and regulations specific to the region and including registering a company</p> <p>PC9. determine the amount of manpower required to run an enterprise for delivering products/services</p>
Setting up and managing a micro-enterprise	<p>To be competent, the user/individual must be able to:</p> <p>PC10. deal effectively with all the stakeholders such as vendors, customers, suppliers etc</p> <p>PC11. assure and maintain quality of products and services delivered</p> <p>PC12. effectively manage the employees in the enterprise</p> <p>PC13. do primary accounting and effectively manage money</p>
Knowledge and Understanding (K)	

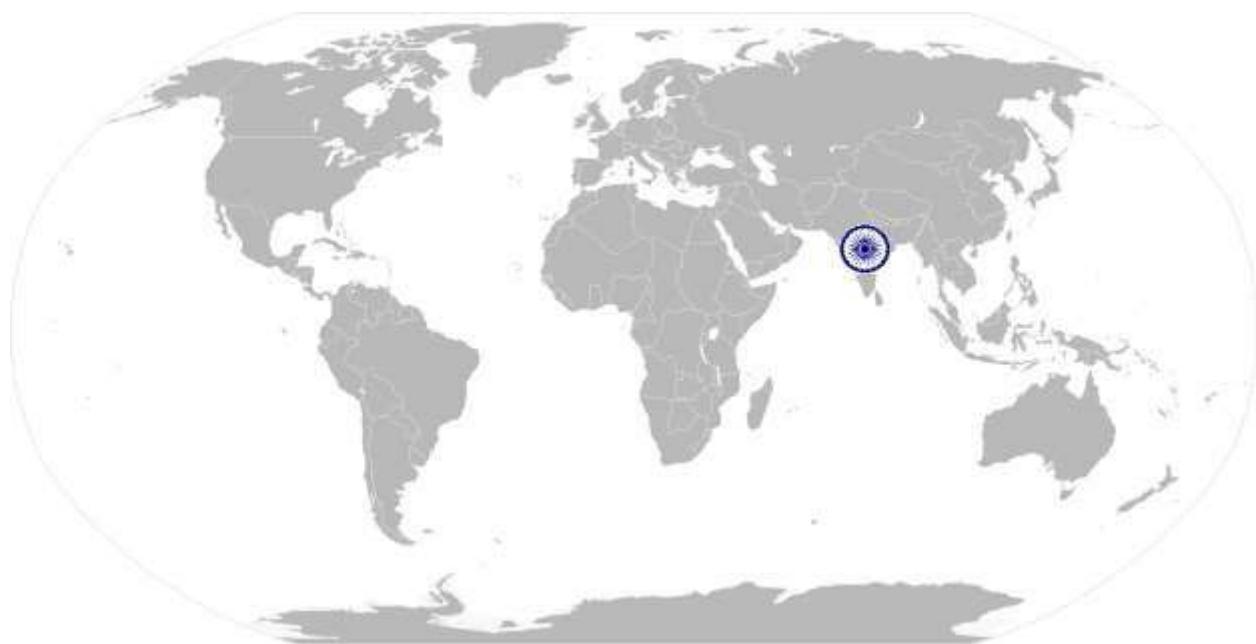
A. Organizational Context (Knowledge of the enterprise and its processes)	The user/individual on the job needs to know and understand: KA1. decision making on products/services to be delivered by the enterprise KA2. methods and importance of market survey KA3. methods and importance of consulting with experts KA4. acquire knowledge on basic communication, management, accounting, marketing skills and basic IPR and tax laws applicable to one's trade
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. basic computer skills such as document editing, making presentations and managing worksheets KB2. understand and comply with Tax and wage laws as applicable to a business KB3. record keeping as per statutory requirements KB4. maintain an inventory of all raw materials, finished products, stock distribution KB5. types of patents and ownership issues
Skills (S)	
A. Core Skills/ Generic Skills	<p>Writing Skills</p> <p>The user/ individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA1. note the information to be communicated SA2. fill relevant applications where required SA3. document processes SA5. write clear communications to government officials, funding partners, team members, etc. <p>Reading Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA6. read and interpret process flowcharts for all products/services offered SA7. read internal communications from the key players including team members, consumers, suppliers etc. SA8. gather and read information about the sector, market, trade, etc. <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SA9. discuss task lists, schedules and activities with customers, peers, partners, vendors etc. SA10. effectively communicate with teams SA11. interact with successful local entrepreneurs, and enterprises in a similar field for best practices and expertise. SA12. ask questions in order to understand problems and clarify queries SA13. actively listen and comprehend information
	Decision Making

B. Professional Skills	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB1. define enterprise decision-making processes SB2. take appropriate decisions
	Plan and Organize
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB3. plan and organize work SB4. plan and allot work/responsibilities to employees or team members SB5. organize material and digital resources for enterprise SB6. prioritize work based on enterprise needs SB7. prioritize work based on customer/market requirement SB8. plan to utilize the time and equipment effectively SB9. support teams as required
	Customer Centricity
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB10. respond as per customer requirements, priorities, and needs
	Problem Solving
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB11. identify problems SB12. arrive at possible solution for problems by discussing with experienced/concerned people
	Analytical Thinking
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB13. apply domain information about maintenance processes and technical knowledge about tools and equipment
	Critical Thinking
	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none"> SB14. use common sense and make judgments on day to day basis SB15. use reasoning skills to identify and resolve basic problems SB16. use intuition to detect any potential problems which could arise during operations SB17. use acquired knowledge of the process for identifying and handling issues

NOS Version Control

NOS Code	FIC/N9005		
Credits (NSQF)	TBD	Version number	1.0
Industry	TBD	Drafted on	26/11/2015
Industry Sub-sector	TBD	Last reviewed on	23/02/2016
Occupation	TBD	Next review date	30/03/2019

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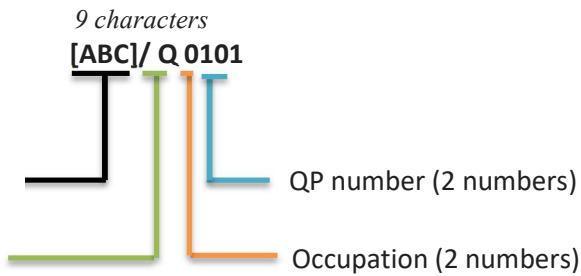
Annexure

Nomenclature for QP and NOS

Qualifications Pack

[Insert 3 letter code for SSC]

Q denoting Qualifications Pack

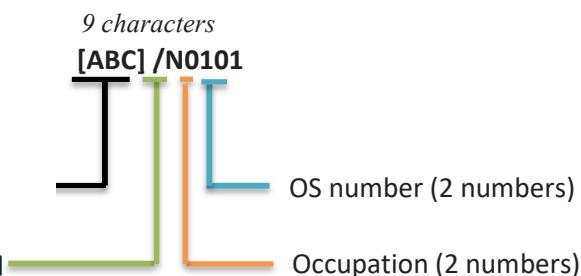


Occupational Standard

An example of NOS with 'N'

[Insert 3 letter code for SSC]

N denoting National Occupational Standard



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

Sub-sector	Range of Occupation numbers
Passive Components	01 - 10
Semiconductors	11 - 20
PCB Manufacturing	21 - 30
Consumer Electronics	31 - 40
IT Hardware	41 - 50
PCB Assembly	51 - 55
Solar Electronics	56 - 60
Strategic Electronics	61 - 65
Automotive Electronics	66 - 70
Industrial Electronics	71 - 75
Medical Electronics	76 - 80
Communication Electronics	81 - 85
PCB Design	86 - 90
LED	91 - 95

Sequence	Description	Example
Three letters	Electronics	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: Multi Skill Technician (Electrical)

Qualification Pack: ELE/Q3109

Sector Skill Council: Electronics Sector Skill 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. 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% in every NOS.
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.

Assessable Outcomes	Assessment Criteria	Total Marks	Out of	Theory	Practical Skills
ELE/N3101 Engage with customer for service	PC1. check customer complaint registered at customer care or installation schedule	100	3	1	2
	PC2. call customer to confirm problem and fix time for visit		4	2	2
	PC3. greet the customer and confirm the problem registered		4	2	2
	PC4. be polite and patient when interacting with customer		4	2	2
	PC5. check about warranty status of appliance and annual maintenance contract		3	1	2
	PC6. anticipate possible problems to carry tools and parts accordingly		4	2	2
	PC7. ascertain customer location in order to make the route plan for the day		3	1	2
	PC8. enquire about the symptoms and history of problems in the appliance		5	2	3
	PC9. ask about the age of appliance and status of upkeep		5	2	3

	PC10. identify the problem based on customer's information		5	2	3
	PC11. communicate the problems identified and educate on possible reasons		5	2	3
	PC12. inform about costs involved		5	2	3
	PC13. discuss the problem(s) identified with customer		6	3	3
	PC14. suggest possible solutions and costs involved		6	3	3
	PC15. explain the time required and methodology for servicing necessary		7	3	4
	PC16. seek customer's approval on further action		6	3	3
	PC17. accurately assess the problem and solution(s) necessary		3	1	2
	PC18. offer most appropriate and cost-effective service as per customer's requirement		3	1	2
	PC19. communicate problem effectively in order to secure customer's confidence		4	1	3
	PC20. ensure customer satisfaction and positive feedback		4	1	3
	PC21. record minimum customer complaints post service		3	1	2
	PC22. avoid repeat problem post service		4	1	3
	PC23. prepare most optimum route plan to complete daily target visits		4	1	3
		Total	100	40	60
ELE/N9302 Diagnose and repair fault in LED Light	PC1. connect the non-functional LED Light with the AC source and switch it on	100	2	1	1
	PC2. check that there is no loose, de-soldered wires and connections if the light does not switch on		2	1	1
	PC3. solder wires and make connections in case of loose, de-soldered wires and connections to make the light operational again		2	1	1
	PC4. dismantle the LED light if no loose, de-soldered wires and connections are found externally		2	1	1
	PC5. check the LED light engine with DC supply as per the voltage / current requirements of the product		2	1	1

	PC6. replace the LED light engine if it is found faulty		3	1	2
	PC7. check the supply unit with AC supply / multimeter to find out the voltage / current output in case LED light Engine is not found defective		3	1	2
	PC8. check voltage / current output at different sections of the supply unit with multimeter to find out its damaged section in case of no voltage / current output found in supply unit		2	1	1
	PC9. check the components with multimeter individually of the section where voltage output is found to be less than desired / no output		3	1	2
	PC10. repair / replace the damaged components / SMPs		3	1	2
	PC11. check output voltage/current of the supply unit again with multimeter		3	1	2
	PC12. reassemble the LED light if repaired / replaced supply unit is found okay		3	1	2
	PC13. connect the non-functional LED Light with the AC source and switch it on		5	2	3
	PC14. check how many LED strips are non-functional / damaged from the array of LED strips in the light		5	3	2
	PC15. remove the glass shell from the LED light		5	2	3
	PC16. replace the burnt out / damaged LED strips		5	2	3
	PC17. check the LED array after connecting it with AC source and switching it on		5	2	3
	PC18. replace the glass shell on the LED Light and close it if all the strips are found operational		5	2	3
	PC19. correctly find the root cause of non-functional LED light and repair it in minimum possible time		8	3	5
	PC20. document the fault diagnosis and repair process as per SOP		8	3	5
	PC25. assemble all the parts as per the product design to create LED luminary		8	3	5
	PC26. assemble the product right first time so that rework is not required		8	3	5

	PC27. meet 100% daily target of defect free assembled LED luminaries		8	3	5
		Total	100	40	60
ELE/N3124 Repair small home appliances (Geyser & Fan)	PC1.understand the complete functioning of the Ceiling Fan / Geyser & manufacturer's recommendation(s) on the diagnostic & service procedures to be followed	100	2	1	1
	PC2.understand the possible fault (s) based on the symptoms observed & also reported by customer		2	0	2
	PC3.use a range of diagnostic documents – like service manual, circuit/wiring diagrams, fault analysis charts, flow charts – to investigate the fault		2	1	1
	PC4.use a range of tools & equipment to carry out the diagnostic tests to investigate the fault		2	1	1
	PC5.perform basic diagnostic tests to confirm that the power source is providing requisite inputs to the Ceiling Fan / Geyser & there are no fault with the same and there are no external faults like improper mounting etc.		4	1	3
	PC6.isolate the Ceiling Fan / Geyser / Geyser from the power source & disassemble the component(s) or module(s) from the Ceiling Fan / Geyser and perform the functional test(s) to confirm their working		4	1	3
	PC7.inform the superior if unable to follow the company guidelines and identify the fault		2	1	1
	PC8.test the basic electrical & electronic components using multi-meter		2	1	1
	PC9.check the mains outlet with a multi-meter for correct voltage output		2	1	1
	PC10.correct the minor external faults like loose connections, improper mounting		3	1	2
	PC11.educate the customer to get the major external faults like faulty or intermittent power		2	1	1
	PC12.replace the faulty component or module and re assemble the Ceiling Fan / Geyser		2	1	1

	PC13.take help from assistant/junior technician (if any) & train them about the repair process		3	1	2
	PC14.follow the company's guidelines in case the replacement component(s) or module(s) are not available or any such scenario		3	1	2
	PC15.update the supervisor & the customer in the above situation		3	1	2
	PC16.switch ON the power supply to the Ceiling Fan / Geyser and carry out the functionality test a per the service manual and confirm that it is working normally		2	1	1
	PC17.demonstrate and confirm the functionality of the Ceiling Fan / Geyser to the customer		3	1	2
	PC18.complete documentation procedures to record complaint closure, collect the applicable charges from the customer & provide receipt of the same as per company policies		2	1	1
	PC19.inform the customer about the repairs carried out, preventive care to be taken by them and the usage tips – if any and answer to the queries regarding the Ceiling Fan / Geyser or the faults politely to their satisfaction		2	1	1
	PC20.offer the recommended accessories & extended warranties/AMC to the customer – if available.		2	1	1
	PC21.clean the repair area of all the debris & dispose them with customer's permission		2	1	1
	PC22.collect the defective component(s) or module(s) & handover them to stores		2	1	1
	PC23.thank the customer for giving us a chance to serve them & request them to give a positive feedback		2	1	1
	PC24.inform the superior about the job closure		2	1	1
	PC25.interact with service technicians from time to time in-order to understand problems faced on the field		3	1	2
	PC26.educate junior level technicians about the commonly occurring problems, diagnosis procedures & customer handling		3	1	2

	PC27.diagnose the problem accurately and in short time		3	1	2
	PC28.identify the problem modules such as the motor, bush, bearing etc		2	1	1
	PC29.optimise the time taken to fix the dysfunctional Ceiling Fan / Geyser		3	1	2
	PC30.rectify to avoid the repeat fault in the Ceiling Fan / Geyser		3	1	2
	PC31.record minimum customer complaints post service		2	1	1
	PC32.select the right spares as per recorded complaints at the customer care		2	1	1
	PC33.educate customer on Ceiling Fan / Geyser maintenance to avoid problems in the future		3	1	2
	PC34.ensure damage free handling of the Ceiling Fan / Geyser		2	1	1
	PC35.achieve 100% customer satisfaction		2	1	1
	PC36.make sale of related products such as new equipment or AMC – as applicable		2	1	1
	PC37.comply with health and safety, environmental and other relevant regulations and organizational guidelines at work		3	1	2
	PC38.adhere to procedures and guidelines for personal protective equipment (PPE) and other relevant safety regulations while performing the repair operations		2	1	1
	PC39.ensure work area is clean and safe from hazards		2	1	1
	PC40.ensure that all tools, equipment, power tool cables, extensions are in a safe and usable condition		2	1	1
	PC41.dispose of waste items in a safe and environmentally acceptable manner		2	0	2
	PC42.leave the work area in a safe condition and free from foreign object debris		2	1	1
		Total	100	40	60
ELE/N3118 Install the water purifier	PC1. visit the customer's premise before carrying out the installation	100	2	1	1
	PC2. interact with the customer to understand whether the water purifier would be placed under the sink (UTS) or on the wall		3	1	2

	PC3. check that the location meets structural requirements such as distance from power supply, vicinity to plumbing point, etc.		2	1	1
	PC4. make the customer aware of any pre installations/masonry/electrical work to be carried out and educate the customer about requirement of adequate water pressure at the inlet source		2	1	1
	PC5. make necessary markings for placement of the water purifier unit		2	1	1
	PC6. seek appointment for the next visit		2	1	1
	PC7. remove the packaging in which the purifier was shipped to customer from point of sale/ warehouse		2	1	1
	PC8. check that the product matches the customer order in terms of colour and make		2	1	1
	PC9. check that all supporting accessories purchased have are there in the pack		2	1	1
	PC10. check that tools and fitments required for the installation are available		2	1	1
	PC11. clear up the packaging material waste and dispose as per company's norms		2	1	1
	PC12. check if pre installation requirements are met		3	1	2
	PC13. make measurements at the location identified and drill holes ensuring no internal wiring damage takes place		4	2	2
	PC14. mount the filter and ensure that the screws are fastened securely		3	1	2
	PC15. drain the inlet line before connecting it to the water purifier		3	1	2
	PC16. connect the outlet pipe to the drain (if applicable)		3	1	2
	PC17. connect the purifier to the nearest power supply point		3	1	2
	PC18. ensure that the filter is aligned as per instructions in the installation manual		5	2	3
	PC19. run the purifier and ensure there are no leaks at any point		5	2	3
	PC20. demonstrate the features and utility to the customer		5	1	4

	PC21. explain maintenance procedures to be followed while using the water purifier		5	2	3
	PC22. fill in customer acknowledgement form		2	1	1
	PC23. seek customer's signature		2	1	1
	PC24. complete other documentation for recording completion of installation		3	1	2
	PC25. call customer care and inform about job completed		3	1	2
	PC26. understand the work requirement from superior, periodically		3	1	2
	PC27. report to superior on the work completed		3	1	2
	PC28. escalate the customer issues and problems that are unresolved in the field		3	1	2
	PC29. document the work completed on the company ERP software for tracking and future references		3	1	2
	PC30. remove packaging without damage to the water purifier unit and accessories		2	1	1
	PC31. position the water filter as per requirements specified in instructions manual		2	1	1
	PC32. educate customer on importance of proper placing		2	1	1
	PC33. carry and use the correct tools and equipment for installation		2	1	1
	PC34. operate and check that they are in a safe and stable condition		2	1	1
	PC35. complete installation in time target given		2	0	2
	PC36. educate customer on proper operation and maintenance procedures		2	1	1
	PC37. complete daily field schedule as per instructions/format within the designated time		2	1	1
		Total	100	40	60
ELE/N3119 Repair dysfunctional Water Purifier	PC1. diagnose the fault based on customer interaction and initial inspection	100	4	2	2
	PC2. check if the water pressure is as specified by company standards		3	1	2
	PC3. shut off the system by turning off water supply and unplug the unit		3	1	2

	PC4. place a piece of cloth or towel under the unit in order to avoid any water spills on the floor		3	1	2
	PC5. carry out basic inspection of feed water valve, tank valve, tubing, housing etc.		3	1	2
	PC6. separate and inspect every part of the unit if the fault is not identified through basic inspection		4	2	2
	PC7. send to factory for in depth diagnosis, if problem remains un-identified at site		4	2	2
	PC8. replace component at location, if the fault identified is because of damage of components such as valves or wearing out of membrane or filter		11	4	7
	PC9. remove and replace the faulty module with a functional one, either on a second visit or as pre-identified and collected from the service centre, if the problem is at the PCB level or components that cannot be replaced at site		11	4	7
	PC10. reassemble the unit		3	1	2
	PC11. start supply of water to the unit and confirm that unit is functioning		3	1	2
	PC12. check that all the modules of the unit work as per specifications		4	2	2
	PC13. demonstrate and confirm functionality of the unit with customer		4	2	2
	PC14. educate the customer about cleaning procedures and other best practices		3	1	2
	PC15. collect necessary payments from the customer, if applicable		3	1	2
	PC16. fill in customer acknowledgement form		3	1	2
	PC17. complete other documentation procedures to record complaint closure		3	1	2
	PC18. ensure damage free handling of the unit		2	1	1
	PC19. diagnose the problem accurately and in assigned time		2	1	1
	PC20. identify the problem modules accurately such as inlet valve, auto shut off valve, saddle valve, housing, O ring, PCB		2	1	1
	PC21. fix the dysfunctional water purifier in designated time		2	1	1

	PC22. rectify completely to avoid repeat fault in the water purifier		2	1	1
	PC23. record minimum customer complaints post service		2	1	1
	PC24. meet daily target on attending to number of complaints		2	1	1
	PC25. select the right spares according to recorded complaints at the customer care		2	1	1
	PC26. clearly communicate type of module required to the service centre, if a faulty module is to be replaced		2	1	1
	PC27. secure repairs completion receipt from customer		2	1	1
	PC28. educate customer on water purifier maintenance and correct practices to follow in order to avoid further problems		2	0	2
	PC29. ensure 100% customer satisfaction		2	0	2
	PC30. recover payments as per rate sheet/ communication from customer care		2	1	1
	PC31. sell related products such as new equipment or Annual Maintenance Contracts (AMC) as per company policy		2	1	1
			Total	100	40
ELE/N3120 Repair dysfunctional mixer/juicer/grinder	PC1. understand usage pattern of the mixer/grinder from the customer	100	4	2	2
	PC2. diagnose the fault based on customer interaction and initial inspection		5	2	3
	PC3. unplug the unit , turn overload switch back to original position if the appliance turned off due to overload		4	2	2
	PC4. carry out basic tests such as power supply inspection, volt ampere test and earth test power supply		4	2	2
	PC5. separate and inspect every module of the unit if the fault is not identified through basic tests		4	2	2
	PC6. send to factory for in depth diagnosis, if problem remains un-identified at site		4	2	2
	PC7. replace component at location, if the fault identified is because of damage of components such as relay or thermostat		12	4	8

<p>PC8. remove and replace the faulty module with a functional one, either on a second visit or as pre-identified and collected from the service centre, if the problem is at the PCB level or components that cannot be replaced at site</p> <p>PC9. reassemble the unit</p> <p>PC10. switch on power supply and confirm that unit is functioning</p> <p>PC11. demonstrate and confirm functionality of the unit with customer</p> <p>PC12. educate the customer about cleaning procedures, using different jars for different purposes and other best practices</p> <p>PC13. collect necessary payments from the customer, if applicable</p> <p>PC14. fill in customer acknowledgement form</p> <p>PC15. complete other documentation procedures to record complaint closure</p> <p>PC16. ensure damage free handling of the unit</p> <p>PC17. diagnose the problem accurately and in assigned time</p> <p>PC18. identify the problem modules accurately such as the power supply, overload circuit breaker, motors, PCB</p> <p>PC19. fix the dysfunctional appliance in designated time</p> <p>PC20. rectify completely to avoid repeat fault in the appliance</p> <p>PC21. record minimum customer complaints post service</p> <p>PC22. meet daily target on attending to number of complaints</p> <p>PC23. select the right spares according to recorded complaints at the customer care</p> <p>PC24. clearly communicate type of module required to the service centre, if a faulty module is to be replaced</p> <p>PC25. secure repairs completion receipt from customer</p>		12	4	8
		4	2	2
		3	1	2
		4	2	2
		4	2	2
		3	1	2
		3	1	2
		3	1	2
		2	1	1
		2	1	1
		2	1	1
		2	1	1
		2	1	1
		1	0	1
		2	1	1
		2	0	2
		2	1	1

	PC26. educate customer on maintenance and correct practices to follow in order to avoid further problems		2	1	1
	PC27. ensure 100% customer satisfaction		2	0	2
	PC28. recover payments as per rate sheet/ communication from customer care		2	0	2
	PC29. sell related products such as new equipment or Annual Maintenance Contracts (AMC) as per company policy		2	1	1
		Total	100	40	60
ELE/N9919 Work with superiors and colleagues	PC1. understand work requirements by receiving instructions from reporting supervisor	100	7	3	4
	PC2. understand standard operating procedure of the company		6	3	3
	PC3. escalate problems that cannot be handled including repetitive PCB defects, machine failures, potential hazards, process disruptions, repairs and maintenance of machine		6	3	3
	PC4. report work completed and receive feedback on work done		7	3	4
	PC5. resolve personnel issues		6	2	4
	PC6. rectify errors as per feedback and minimize mistakes to zero in future		6	2	4
	PC7. communicate about process flow improvements, quality of output, product defects received from previous process, repairs and maintenance of tools and machinery as required and find technical solutions on specific issues		6	2	4
	PC8. handover completed work and deliver the work of expected quality despite constraints		6	2	4
	PC9. collect required spares and raw materials from tool room or stores		8	3	5
	PC10. deposit unused or faulty materials, parts and tools to stores		8	3	5
	PC11. assist colleagues where necessary and as per capability		9	4	5
	PC12. resolve conflicts with colleagues at work to achieve smooth workflow		9	4	5
	PC13. complete rework in time based on feedback from quality or process departments		8	3	5

	PC14. put team over individual goals		8	3	5
		Total	100	40	60
ELE/N9921 Follow safety standards	PC1. spot and report potential hazards on time	100	5	2	3
	PC2. follow company policy and rules regarding hazardous materials		5	2	3
	PC3. avoid accidents related to use of potentially dangerous chemicals, gases, sharp tools and hazards from machines which involves exposure to possible injuries such as cuts, bites, stings, minor burns, etc.		5	2	3
	PC4. Handle with care when using an electrical drill and sharp cutting objects		5	2	3
	PC5. understand which safety gear must be used for a particular task		6	3	3
	PC6. eye, respiratory and hearing protection as per company policy		7	3	4
	PC7. use safety gear such as respirator, mask, skull caps, gloves, goggles, jacket , etc., as prescribed for the job		7	3	4
	PC8. comply with standard health and safety procedure followed in the company while handling an equipment and hazardous materials and tools or situations		10	4	6
	PC9. understand and follow the evacuation procedure properly such as fire drills, emergency evacuation procedures, first aid to self and others, etc., which help in case of an emergency		10	4	6
	PC10. take adequate safety measures while on work to prevent accidents		4	2	2
	PC11. ensure zero accidents in work		4	2	2
	PC12. avoid damage of components due to negligence in ESD procedures		4	2	2
	PC13. ensure no loss for company due to safety negligence		4	2	2
	PC14. ensure proper machine maintenance, work process achieving quality outputs as per the company standard		4	2	2
	PC15. improve process flow to reduce anticipated or repetitive hazards		4	1	3

	PC16. report on mishandling of tools, machines or hazardous materials and on electrical problems that could result in accident		4	1	3
	PC17. escalate about any hazardous materials or things found in the premises		4	1	3
	PC18. report about any breach of safety procedure in the company		4	1	3
	PC19. follow electrostatic discharge (ESD) measures for electronic component safety		4	1	3
		Total	100	40	60

Assessment outcomes	Assessment criteria for outcomes	Marks Allocation			
		Total Marks	Out Of	Theory	Skills Practic
FIC/N9005 (Developing Entrepreneurial Skills)	PC1. identify gaps in markets for different products/services	100	5	2	3
	PC2. identify the customer needs for different products/services		10	3	7
	PC3. identify different features of products/services to be marketed		10	3	7
	PC4. identify the cheap and regular sources of supply for raw materials		10	3	7
	PC5. determine the pricing of the products depending upon competitive businesses		7	3	4
	PC6. identify various mediums online/offline) to sell products/services to target such as customers such as blogs, personal websites, e-commerce portals, exhibitions, stalls, etc.		7	2	5
	PC7. identify different sources of loans/funds and the formalities to raise the same		7	3	4
	PC8. understand basic government rules and regulations specific to the region and including registering a company		10	4	6
	PC9. determine the amount of manpower required to run an enterprise for delivering products/services		7	2	5
	PC10. deal effectively with all the stakeholders such as vendors, customers, suppliers etc		7	3	4
	PC11. assure and maintain quality of products and services delivered		7	2	5

PC12. effectively manage the employees in the enterprise
PC13. do primary accounting and effectively manage money

6	3	3
7	2	5
100	35	65