



# Quality Manager - Electronics

QP Code: ELE/Q7902

Version: 1.0

NSQF Level: 6

Electronics Sector Skills Council of India || 155, 2nd Floor, ESC House Okhla Industrial Area-Phase 3  
New Delhi- 110020 || email:standards@essc-india.org

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## ELE/Q7902: Quality Manager - Electronics

### Brief Job Description

A Quality Manager - Electronics is responsible for managing quality in all organisational operations. It starts from ensuring the quality of components received from the supplier to the quality of final output, including the quality of the production process. The individual also recruits, trains and manages a team of quality inspectors and supervisors, apart from driving quality initiatives in the organisation to ensure it remains competitive in the market.

### Personal Attributes

The individual in this job role must possess strong leadership, management, analytical and problem-solving abilities. The person must be adept at using various computer applications for efficient data and record management. The individual must have good communication skills, attention to detail and a strong sense of quality in all the activities.

### Applicable National Occupational Standards (NOS)

#### Compulsory NOS:

1. [ELE/N7906: Manage quality in the product design process](#)
2. [ELE/N7907: Manage the supplier relationship and receipt inspection process](#)
3. [ELE/N7908: Manage quality in the production process and final output](#)
4. [ELE/N7909: Manage recruitment, training and drive quality initiatives for projects](#)
5. [ELE/N9905: Work effectively at the workplace](#)
6. [ELE/N1002: Apply health and safety practices at the workplace](#)

### Qualification Pack (QP) Parameters

<b>Sector</b>	Electronics
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Quality Maintenance
<b>Country</b>	India
<b>NSQF Level</b>	6

<b>Credits</b>	NA
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/NIL
<b>Minimum Educational Qualification &amp; Experience</b>	<p>Diploma ((after 10 (Electrical or Electronics Engineering) with 5 Years of Relevant experience) OR (3 Years Diploma after 12 (Electrical or Electronics Engineering) with 3 Years of Relevant experience))</p> <p>OR</p> <p>B.E./B.Tech (((Degree in Electrical or Electronics Engineering) with 02 Year of relevant Experience) OR (M.E/M.Tech in Electrical or Electronics Engineering))</p> <p>OR</p> <p>Certificate-NSQF (Level-5 in Quality Engineer) with 2 Years of experience in the relevant field</p>
<b>Minimum Level of Education for Training in School</b>	
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	21 Years
<b>Last Reviewed On</b>	24/02/2022
<b>Next Review Date</b>	02/06/2025
<b>Deactivation Date</b>	31/07/2024
<b>NSQC Approval Date</b>	24/02/2022
<b>Version</b>	1.0
<b>Reference code on NQR</b>	2022/EHW/ESSC/05394
<b>NQR Version</b>	1.0

## **ELE/N7906: Manage quality in the product design process**

### **Description**

This OS unit is about identifying and taking various initiatives in the organisation to improve the quality of processes and output.

### **Scope**

The scope covers the following :

- Identify the customer needs and concerns
- Carry out Advanced Product Quality Planning (APQP)

### **Elements and Performance Criteria**

#### *Identify the customer needs and concerns*

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

- PC1.** identify different methods of connecting with the target customers such as surveys, focus groups, social listening, etc.
- PC2.** connect with the target customers to understand their expectations/ concerns with the product offered by the organisation
- PC3.** collect sufficient data and analyse it to draw reliable conclusions regarding customer expectations/ concerns

#### *Carry out Advanced Product Quality Planning (APQP)*

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

- PC4.** prepare a plan and define the program as per the customer needs and expectations from the existing or proposed product(s)
- PC5.** prepare, review and verify the product design
- PC6.** determine the material specifications and equipment requirements
- PC7.** carry out Design Failure Mode and Effect Analysis (DFMEA) to assess the failure probabilities
- PC8.** establish control plans for product prototype creation
- PC9.** design and develop the production process with a focus on product specifications, quality and production costs
- PC10.** determine the capability and reliability of the manufacturing process and product quality acceptance criteria
- PC11.** develop the verification and validation plans, and effective quality control processes
- PC12.** carry out benchmarking with the top competitors' products to ensure the relevance and quality of the product
- PC13.** arrange for carrying out production trial runs
- PC14.** collect and assess the data related to quality planning effectiveness
- PC15.** evaluate and test the product output to confirm the effectiveness of the deployed manufacturing approach
- PC16.** carry out necessary adjustments to the product and process, if required
- PC17.** arrange external technical help such as a process engineer or technical assistant, if required

**PC18.** identify issues and implement corrective actions to support continual improvement and reduce process variations

**PC19.** ensure the relevant legal and safety standards are followed in the designing process

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** different methods of connecting with the target customers such as surveys, focus groups, social listening to understand their expectations/ concerns with the product offered by the organisation
- KU2.** the methods of collecting data and analyse it to draw reliable conclusions regarding customer expectations/ concerns
- KU3.** the importance and process of carrying out Advanced Product Quality Planning (APQP)
- KU4.** how to prepare a plan and define the program as per the customer needs and expectations from the existing or proposed product(s)
- KU5.** the importance of conducting production trial runs and testing the product output to confirm the effectiveness of the deployed manufacturing approach before launching full-scale production
- KU6.** the importance and process of identifying issues and taking corrective actions to support continual improvement and reduce process variations
- KU7.** applicable legal and safety standards to be followed in the designing process

### Generic Skills (GS)

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

- GS1.** write formal emails and letters to communicate with the senior management and suppliers
- GS2.** read the relevant literature to keep abreast with the latest developments in the field of work
- GS3.** communicate politely and professionally
- GS4.** listen attentively to understand the information being shared
- GS5.** plan and schedule tasks to ensure timely completion
- GS6.** identify possible disruptions to work and take appropriate preventive measures
- GS7.** take quick decisions to deal with workplaces emergencies/ accidents
- GS8.** analyse work processes to identify improvements
- GS9.** coordinate with the co-workers to achieve the work objectives

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Identify the customer needs and concerns</i>	<b>10</b>	<b>25</b>	-	<b>8</b>
<b>PC1.</b> identify different methods of connecting with the target customers such as surveys, focus groups, social listening, etc.	-	-	-	-
<b>PC2.</b> connect with the target customers to understand their expectations/ concerns with the product offered by the organisation	-	-	-	-
<b>PC3.</b> collect sufficient data and analyse it to draw reliable conclusions regarding customer expectations/ concerns	-	-	-	-
<i>Carry out Advanced Product Quality Planning (APQP)</i>	<b>20</b>	<b>30</b>	-	<b>7</b>
<b>PC4.</b> prepare a plan and define the program as per the customer needs and expectations from the existing or proposed product(s)	-	-	-	-
<b>PC5.</b> prepare, review and verify the product design	-	-	-	-
<b>PC6.</b> determine the material specifications and equipment requirements	-	-	-	-
<b>PC7.</b> carry out Design Failure Mode and Effect Analysis (DFMEA) to assess the failure probabilities	-	-	-	-
<b>PC8.</b> establish control plans for product prototype creation	-	-	-	-
<b>PC9.</b> design and develop the production process with a focus on product specifications, quality and production costs	-	-	-	-
<b>PC10.</b> determine the capability and reliability of the manufacturing process and product quality acceptance criteria	-	-	-	-
<b>PC11.</b> develop the verification and validation plans, and effective quality control processes	-	-	-	-
<b>PC12.</b> carry out benchmarking with the top competitors' products to ensure the relevance and quality of the product	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC13.</b> arrange for carrying out production trial runs	-	-	-	-
<b>PC14.</b> collect and assess the data related to quality planning effectiveness	-	-	-	-
<b>PC15.</b> evaluate and test the product output to confirm the effectiveness of the deployed manufacturing approach	-	-	-	-
<b>PC16.</b> carry out necessary adjustments to the product and process, if required	-	-	-	-
<b>PC17.</b> arrange external technical help such as a process engineer or technical assistant, if required	-	-	-	-
<b>PC18.</b> identify issues and implement corrective actions to support continual improvement and reduce process variations	-	-	-	-
<b>PC19.</b> ensure the relevant legal and safety standards are followed in the designing process	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>55</b>	<b>-</b>	<b>15</b>



## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ELE/N7906
<b>NOS Name</b>	Manage quality in the product design process
<b>Sector</b>	Electronics
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Quality Maintenance
<b>NSQF Level</b>	6
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	24/02/2022
<b>Next Review Date</b>	24/02/2025
<b>NSQC Clearance Date</b>	24/02/2022

## **ELE/N7907: Manage the supplier relationship and receipt inspection process**

### **Description**

This OS unit is about the managing supplier relationship and inspecting the components received from the supplier to ensure the expected standards of quality are met.

### **Scope**

The scope covers the following :

- Manage the supplier relationship
- Manage receipt inspection

### **Elements and Performance Criteria**

#### *Manage the supplier relationship*

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

- PC1.** formulate quality standards for components and the process of monitoring their compliance by working with the supplier
- PC2.** prepare the required training modules to train the supplier such as Corrective and Preventive Actions (CAPA) reporting
- PC3.** train the supplier to ensure the components they manufacture comply with the applicable quality and regulatory standards
- PC4.** ensure the supplier follows the terms of contract and quality standards to minimise the time and cost of the inspection, and achieve the quality of final output
- PC5.** ensure the supplier delivers the components in a timely manner to avoid any negative impact on the company's production process
- PC6.** detect any deviations on part of the supplier in following the quality standards and ensure the appropriate corrective action is taken promptly
- PC7.** arrange for critical performance tests to be carried out by the authorised personnel at the supplier's premises and verify the batches, if required
- PC8.** review the supplier performance regularly as per the organisational policy and make recommendations to the senior management regarding the renewal of the supplier's contract or finding new supplier(s)

#### *Manage receipt inspection*

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

- PC9.** prepare an incoming inspection checklist, and set the process and parameters for checking the received components against the approved samples for comparison, such as common defects, Acceptance Quality Limit (AQL), etc.
- PC10.** instruct the quality inspector to carry out random sampling to ensure the components received are fit for the intended purpose
- PC11.** ensure the established industry sampling standards are followed while carrying out sampling
- PC12.** ensure that the relevant critical tests are carried out to check the critical and technical parameters as per the product design provided by the design team

- PC13.** supervise the process of identification and classification of batches with defective units above the acceptable number that don't meet the AQL
- PC14.** authorise the acceptance/ rejection of batches based on the critical tests carried out
- PC15.** report the defective batches to the supplier promptly, and arrange for the defective batches to be returned to them for replacement or corrective action to be taken by the supplier in the company premises
- PC16.** ensure accurate records with respect to the approved and rejected batches are maintained

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the importance of formulating quality standards for components and the process of monitoring their compliance by the supplier
- KU2.** the importance and process of training the supplier such as CAPA and train them to ensure the components they manufacture comply with the applicable quality and regulatory standards
- KU3.** different ways to minimise the time and cost of inspection
- KU4.** the importance of receiving components from the supplier in a timely manner to avoid any negative impact on the company production process
- KU5.** how to detect deviations on part of the supplier in following the quality standards and taking corrective action promptly
- KU6.** the process of preparing an incoming inspection checklist, and setting the process and parameters for checking the received components
- KU7.** the importance of carrying out random sampling and the applicable industry sampling standards
- KU8.** the importance and process of carrying out critical tests to check the critical and technical parameters as per the product design provided by the design team
- KU9.** the importance of maintaining accurate records with respect to the approved and rejected batches

### Generic Skills (GS)

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

- GS1.** write formal emails and letters to communicate with the senior management and suppliers
- GS2.** read the relevant literature to keep abreast with the latest developments in the field of work
- GS3.** communicate politely and professionally
- GS4.** listen attentively to understand the information being shared
- GS5.** plan and schedule tasks to ensure timely completion
- GS6.** identify possible disruptions to work and take appropriate preventive measures
- GS7.** take quick decisions to deal with workplaces emergencies/ accidents
- GS8.** analyse work processes to identify improvements
- GS9.** coordinate with the co-workers to achieve the work objectives

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Manage the supplier relationship</i>	<b>16</b>	<b>30</b>	-	<b>7</b>
<b>PC1.</b> formulate quality standards for components and the process of monitoring their compliance by working with the supplier	-	-	-	-
<b>PC2.</b> prepare the required training modules to train the supplier such as Corrective and Preventive Actions (CAPA) reporting	-	-	-	-
<b>PC3.</b> train the supplier to ensure the components they manufacture comply with the applicable quality and regulatory standards	-	-	-	-
<b>PC4.</b> ensure the supplier follows the terms of contract and quality standards to minimise the time and cost of the inspection, and achieve the quality of final output	-	-	-	-
<b>PC5.</b> ensure the supplier delivers the components in a timely manner to avoid any negative impact on the company's production process	-	-	-	-
<b>PC6.</b> detect any deviations on part of the supplier in following the quality standards and ensure the appropriate corrective action is taken promptly	-	-	-	-
<b>PC7.</b> arrange for critical performance tests to be carried out by the authorised personnel at the supplier's premises and verify the batches, if required	-	-	-	-
<b>PC8.</b> review the supplier performance regularly as per the organisational policy and make recommendations to the senior management regarding the renewal of the supplier's contract or finding new supplier(s)	-	-	-	-
<i>Manage receipt inspection</i>	<b>14</b>	<b>25</b>	-	<b>8</b>
<b>PC9.</b> prepare an incoming inspection checklist, and set the process and parameters for checking the received components against the approved samples for comparison, such as common defects, Acceptance Quality Limit (AQL), etc.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC10.</b> instruct the quality inspector to carry out random sampling to ensure the components received are fit for the intended purpose	-	-	-	-
<b>PC11.</b> ensure the established industry sampling standards are followed while carrying out sampling	-	-	-	-
<b>PC12.</b> ensure that the relevant critical tests are carried out to check the critical and technical parameters as per the product design provided by the design team	-	-	-	-
<b>PC13.</b> supervise the process of identification and classification of batches with defective units above the acceptable number that don't meet the AQL	-	-	-	-
<b>PC14.</b> authorise the acceptance/ rejection of batches based on the critical tests carried out	-	-	-	-
<b>PC15.</b> report the defective batches to the supplier promptly, and arrange for the defective batches to be returned to them for replacement or corrective action to be taken by the supplier in the company premises	-	-	-	-
<b>PC16.</b> ensure accurate records with respect to the approved and rejected batches are maintained	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>55</b>	<b>-</b>	<b>15</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ELE/N7907
<b>NOS Name</b>	Manage the supplier relationship and receipt inspection process
<b>Sector</b>	Electronics
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Quality Maintenance
<b>NSQF Level</b>	6
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	24/02/2022
<b>Next Review Date</b>	24/02/2025
<b>NSQC Clearance Date</b>	24/02/2022

## ELE/N7908: Manage quality in the production process and final output

### Description

This OS unit is about managing the quality aspect during the production process, evaluating the quality of output and resolving any concerns identified.

### Scope

The scope covers the following :

- Manage the quality in the production process
- Evaluate the quality of output
- Deal with output quality-related problems
- Collect and analyse data

### Elements and Performance Criteria

#### *Manage the quality in the production process*

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

- PC1.** ensure that the personnel involved in the production process are trained in the use of relevant tools, equipment and Personal Protective Equipment (PPE)
- PC2.** supervise inspectors, technicians and other staff and provide guidance and feedback
- PC3.** monitor and evaluate the production process to ensure compliance with the defined quality standards
- PC4.** identify deviations in the production process and take appropriate corrective action
- PC5.** ensure the components provided to the production line are defect-free
- PC6.** analyse the components that experience problems at the production line
- PC7.** develop and provide an interim corrective action (ICA) plan to the production line to suggest rework or segregation in the existing stock
- PC8.** co-ordinate with the supplier to arrange the supply of a fresh batch to the production line or rework by the supplier
- PC9.** analyse the causes of the breakdown of tools, equipment and machineries and suggest appropriate solutions
- PC10.** use the 7 Quality Control (QC) tools and Corrective Action Preventive Action (CAPA) to collect and analyse information
- PC11.** investigate product and quality-related key problems, control fluctuations in product quality and find the appropriate solutions to avoid output defects
- PC12.** ensure compliance with the relevant internal and regulatory requirements pertaining to the production process and international quality standards

#### *Evaluate the quality of output*

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

- PC13.** evaluate the final output and compare the product properties with the pre-defined requirements to ensure the required standards of quality are achieved
- PC14.** instruct the team to carry out critical tests to ensure the product functions as expected

**PC15.** ensure the established process is followed for auditing and testing of the product with the participation of relevant departments

**PC16.** prepare a check sheet based on the observations during testing

**PC17.** approve the products that meet the quality standards and reject the others

*Deal with output's quality-related problems*

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

**PC18.** highlight the Non-conformities (NCs) in the rejected products and initiate rework

**PC19.** ensure rework is done as per the check sheet prepared during testing

**PC20.** carry out analysis to identify and implement the appropriate corrective measures such as further training requirements of the production line personnel

*Collect and analyse data*

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

**PC21.** collect statistical data with respect to the performance of the production line on the applicable quality parameters

**PC22.** analyse the production line's statistical data to identify quality problems

**PC23.** prepare a variety of quality documentation

**PC24.** identify and recommend changes in the production processes or quality controls to eliminate the identified problems

**PC25.** instruct the quality team to engage with customers and collect product feedback

**PC26.** analyse the product return and feedback data to identify trends and specific problems reported by the end- users

**PC27.** develop and monitor continuous improvement programs to reduce the number of defects, manufacturing costs and improve the overall quality of the output

## **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

**KU1.** the importance of ensuring that the personnel involved in the production process are trained in the use of relevant tools, equipment and Personal Protective Equipment (PPE)

**KU2.** the importance of monitoring and evaluating the production process to ensure compliance with the defined quality standards

**KU3.** how to identify deviations in the production process and take appropriate corrective action

**KU4.** the process of developing and providing an interim corrective action (ICA) plan to the production line to suggest rework or segregation in the existing stock when the production line experiences problems with components

**KU5.** the process of analysing the causes of the breakdown of tools, equipment and machineries and suggesting appropriate solutions

**KU6.** use of 7 Quality Control (QC) tools i.e. Stratification, Histogram, Check sheet, Cause and effect diagram, Pareto chart, Scatter diagram, Control chart and Corrective Action Preventive Action (CAPA) to collect and analyse information

**KU7.** the process of investigation product and quality-related key problems, control fluctuations in product quality and finding appropriate solutions to avoid output defects

**KU8.** the process of evaluating the quality of output by conducting critical tests to ensure the product functions as expected



- KU9.** the importance of following the established process for auditing and testing of the product with the participation of the relevant departments
- KU10.** the process of preparing a check sheet based on the observations during testing and approving/ rejecting the output
- KU11.** the importance of engaging with customers to collect product feedback and analysing the product return data to identify trends and specific problems

### **Generic Skills (GS)**

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

- GS1.** maintain work-related records
- GS2.** read the relevant literature to get the latest updates about the field of work
- GS3.** communicate politely and professionally
- GS4.** listen attentively to understand the information being shared
- GS5.** plan and schedule tasks for efficient time management
- GS6.** take quick decisions to deal with workplace emergencies/ accidents
- GS7.** evaluate all possible solutions to a problem to select the best one

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Manage the quality in the production process</i>	<b>8</b>	<b>16</b>	-	<b>3</b>
<b>PC1.</b> ensure that the personnel involved in the production process are trained in the use of relevant tools, equipment and Personal Protective Equipment (PPE)	-	-	-	-
<b>PC2.</b> supervise inspectors, technicians and other staff and provide guidance and feedback	-	-	-	-
<b>PC3.</b> monitor and evaluate the production process to ensure compliance with the defined quality standards	-	-	-	-
<b>PC4.</b> identify deviations in the production process and take appropriate corrective action	-	-	-	-
<b>PC5.</b> ensure the components provided to the production line are defect-free	-	-	-	-
<b>PC6.</b> analyse the components that experience problems at the production line	-	-	-	-
<b>PC7.</b> develop and provide an interim corrective action (ICA) plan to the production line to suggest rework or segregation in the existing stock	-	-	-	-
<b>PC8.</b> co-ordinate with the supplier to arrange the supply of a fresh batch to the production line or rework by the supplier	-	-	-	-
<b>PC9.</b> analyse the causes of the breakdown of tools, equipment and machineries and suggest appropriate solutions	-	-	-	-
<b>PC10.</b> use the 7 Quality Control (QC) tools and Corrective Action Preventive Action (CAPA) to collect and analyse information	-	-	-	-
<b>PC11.</b> investigate product and quality-related key problems, control fluctuations in product quality and find the appropriate solutions to avoid output defects	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC12.</b> ensure compliance with the relevant internal and regulatory requirements pertaining to the production process and international quality standards	-	-	-	-
<i>Evaluate the quality of output</i>	<b>8</b>	<b>15</b>	-	<b>4</b>
<b>PC13.</b> evaluate the final output and compare the product properties with the pre-defined requirements to ensure the required standards of quality are achieved	-	-	-	-
<b>PC14.</b> instruct the team to carry out critical tests to ensure the product functions as expected	-	-	-	-
<b>PC15.</b> ensure the established process is followed for auditing and testing of the product with the participation of relevant departments	-	-	-	-
<b>PC16.</b> prepare a check sheet based on the observations during testing	-	-	-	-
<b>PC17.</b> approve the products that meet the quality standards and reject the others	-	-	-	-
<i>Deal with output's quality-related problems</i>	<b>8</b>	<b>12</b>	-	<b>5</b>
<b>PC18.</b> highlight the Non-conformities (NCs) in the rejected products and initiate rework	-	-	-	-
<b>PC19.</b> ensure rework is done as per the check sheet prepared during testing	-	-	-	-
<b>PC20.</b> carry out analysis to identify and implement the appropriate corrective measures such as further training requirements of the production line personnel	-	-	-	-
<i>Collect and analyse data</i>	<b>6</b>	<b>12</b>	-	<b>3</b>
<b>PC21.</b> collect statistical data with respect to the performance of the production line on the applicable quality parameters	-	-	-	-
<b>PC22.</b> analyse the production line's statistical data to identify quality problems	-	-	-	-
<b>PC23.</b> prepare a variety of quality documentation	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC24.</b> identify and recommend changes in the production processes or quality controls to eliminate the identified problems	-	-	-	-
<b>PC25.</b> instruct the quality team to engage with customers and collect product feedback	-	-	-	-
<b>PC26.</b> analyse the product return and feedback data to identify trends and specific problems reported by the end- users	-	-	-	-
<b>PC27.</b> develop and monitor continuous improvement programs to reduce the number of defects, manufacturing costs and improve the overall quality of the output	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>55</b>	<b>-</b>	<b>15</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ELE/N7908
<b>NOS Name</b>	Manage quality in the production process and final output
<b>Sector</b>	Electronics
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Quality Maintenance
<b>NSQF Level</b>	6
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	24/02/2022
<b>Next Review Date</b>	24/02/2025
<b>NSQC Clearance Date</b>	24/02/2022

## ELE/N7909: Manage recruitment, training and drive quality initiatives for projects

### Description

This OS unit is about managing the quality aspect during the production process, evaluating the quality of output and resolving any concerns identified.

### Scope

The scope covers the following :

- Recruit the quality team personnel
- Conduct workshops and training
- Drive quality initiatives

### Elements and Performance Criteria

#### *Recruit the quality team personnel*

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

- PC1.** recruit quality supervisors and inspectors for effective assessment of products and their components at different stages of production
- PC2.** provide documented quality standards as guidelines for their day-to-day work
- PC3.** select quality inspection tools and software to support the inspection team
- PC4.** manage the team effectively to ensure their optimum productivity and highest quality of output

#### *Conduct workshops and training*

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

- PC5.** conduct research to identify ways to bridge the knowledge and skill gaps of the production and quality team personnel
- PC6.** prepare the required training modules and arrange the necessary resources such as audio-visual aids, tools and equipment for the training
- PC7.** conduct workshop, classroom and shop floor training to ensure the quality and production team personnel are fully equipped to perform their duties

#### *Drive quality initiatives*

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

- PC8.** follow the lean manufacturing method to identify ways to optimise the usage of manpower and materials in the organisation
- PC9.** use the six sigma methods to improve the business processes/ Standard Operating Procedures (SOPs) in the organisation
- PC10.** reengineer the critical business processes as per the requirement to improve the quality of output and reduce production costs
- PC11.** coordinate with the relevant stakeholders to formulate and implement appropriate policies
- PC12.** identify and suggest the use of new and advanced tools and technology to improve efficiency in various business processes

## **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

- KU1.** the importance of conducting research to identify ways to bridge the knowledge and skill gaps of the production and quality team personnel
- KU2.** the process of preparing the required training modules
- KU3.** the process of conducting workshop, classroom and shop floor training to ensure the quality and production team personnel are fully equipped to perform their duties
- KU4.** the process of collecting and analysing statistical data with respect to the performance of the production line on the applicable quality parameters
- KU5.** the process of identifying problems and recommending appropriate changes in the production processes or quality controls
- KU6.** the process of developing and monitoring continuous improvement programs to reduce the number of defects, manufacturing costs and improve the overall quality of the output
- KU7.** the use of lean manufacturing method to identify ways to optimise the usage of manpower and materials
- KU8.** the use the six sigma methods to improve the business processes/ Standard Operating Procedures (SOPs)
- KU9.** the process of reengineering the critical business processes to improve the quality of output and reduce production costs

## **Generic Skills (GS)**

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

- GS1.** make work-related records
- GS2.** read the relevant literature to get the latest updates about the field of work
- GS3.** communicate politely and professionally
- GS4.** listen attentively to comprehend the information being shared
- GS5.** take quick decisions to resolve work-related issues to minimise the impact on productivity
- GS6.** plan and prioritise tasks to ensure timely completion
- GS7.** identify possible disruptions to work and take appropriate preventive measures

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Recruit the quality team personnel</i>	<b>8</b>	<b>15</b>	-	<b>5</b>
<b>PC1.</b> recruit quality supervisors and inspectors for effective assessment of products and their components at different stages of production	-	-	-	-
<b>PC2.</b> provide documented quality standards as guidelines for their day-to-day work	-	-	-	-
<b>PC3.</b> select quality inspection tools and software to support the inspection team	-	-	-	-
<b>PC4.</b> manage the team effectively to ensure their optimum productivity and highest quality of output	-	-	-	-
<i>Conduct workshops and training</i>	<b>10</b>	<b>20</b>	-	<b>5</b>
<b>PC5.</b> conduct research to identify ways to bridge the knowledge and skill gaps of the production and quality team personnel	-	-	-	-
<b>PC6.</b> prepare the required training modules and arrange the necessary resources such as audio-visual aids, tools and equipment for the training	-	-	-	-
<b>PC7.</b> conduct workshop, classroom and shop floor training to ensure the quality and production team personnel are fully equipped to perform their duties	-	-	-	-
<i>Drive quality initiatives</i>	<b>12</b>	<b>20</b>	-	<b>5</b>
<b>PC8.</b> follow the lean manufacturing method to identify ways to optimise the usage of manpower and materials in the organisation	-	-	-	-
<b>PC9.</b> use the six sigma methods to improve the business processes/ Standard Operating Procedures (SOPs) in the organisation	-	-	-	-
<b>PC10.</b> reengineer the critical business processes as per the requirement to improve the quality of output and reduce production costs	-	-	-	-
<b>PC11.</b> coordinate with the relevant stakeholders to formulate and implement appropriate policies	-	-	-	-



Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC12.</b> identify and suggest the use of new and advanced tools and technology to improve efficiency in various business processes	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>55</b>	<b>-</b>	<b>15</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ELE/N7909
<b>NOS Name</b>	Manage recruitment, training and drive quality initiatives for projects
<b>Sector</b>	Electronics
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Quality Maintenance
<b>NSQF Level</b>	6
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	24/02/2022
<b>Next Review Date</b>	24/02/2025
<b>NSQC Clearance Date</b>	24/02/2022

## ELE/N9905: Work effectively at the workplace

### Description

This unit is about the communicating and managing work effectively at the workplace as well as taking measures to enhance own competence and working in a disciplined and ethical manner.

### Scope

The scope covers the following :

- Communicate effectively at the workplace
- Work effectively
- Maintain and enhance professional competence
- Work in a disciplined and ethical manner
- Uphold social diversity at the workplace

### Elements and Performance Criteria

#### *Communicate effectively at the workplace*

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

- PC1.** exchange information and instruction with colleagues, and seek clarifications and feedback as necessary
- PC2.** assist colleagues where required
- PC3.** follow business communication etiquette in all interactions and communicative formats (online, digital, and in-person)
- PC4.** document and share all relevant information with stakeholders in agreed formats and as per agreed timelines

#### *Work effectively*

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

- PC5.** identify and obtain clarity regarding organisational, team and own goals and targets
- PC6.** prioritise and plan work in order to achieve goals and targets
- PC7.** monitor own and team performance as per agreed plan
- PC8.** complete duties accurately, systematically and within required timeframes
- PC9.** express emotions appropriately at the workplace and manage own response to heightened emotions
- PC10.** maintain orderliness and cleanliness in the work area

#### *Maintain and enhance professional competence*

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

- PC11.** identify own strengths and weaknesses in relation to goals and targets
- PC12.** adapt self, service, or product to meet success criteria
- PC13.** seek and select opportunities for continuous professional development
- PC14.** formulate a professional development plan to enhance capabilities
- PC15.** build or contribute to the organizational knowledge base of cases, clients, issues, solutions, and innovations

**PC16.** examine developments and trends in field of work and their potential impact on work

**PC17.** take feedback from peers, supervisors and clients to improve own performance and practices

*Work in a disciplined and ethical manner*

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

**PC18.** perform tasks as per workplace standards, organisational policies and legislative requirements

**PC19.** display appropriate professional appearance at the workplace and adhere to the organisational dress code

**PC20.** demonstrate responsible and disciplined behaviour at the workplace such as punctuality; completing tasks as per given time and standards; demonstrating professional behaviour at all times, adopting environment- friendly practices, etc.

**PC21.** identify the cause of conflict and options for resolution with peers or escalate grievances and problems to appropriate authority as per procedure for conflict resolution

**PC22.** protect the rights of the client and organisation when delivering services

**PC23.** ensure services are delivered equally to all clients regardless of personal and cultural beliefs

**PC24.** operate within an agreed ethical code of practice and report unethical conduct to the appropriate authorities

**PC25.** follow organisational guidelines and legal requirements on disclosure and confidentiality

*Uphold social diversity at the workplace*

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

**PC26.** recognize and evaluate biased practices against underrepresented groups like women and persons with disabilities, in workplace systems and processes

**PC27.** identify and report discrimination and harassment based on gender, disability, or cultural difference at the workplace

**PC28.** use inclusive or neutral language and gestures in all interactions

**PC29.** respect the personal and professional space of others

**PC30.** access grievance redressal mechanisms as per legislations

## **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

**KU1.** organisation's policies on dress code, workplace timings, workplace behaviour, performance management, incentives, delivery standards, information security, etc.

**KU2.** organizational hierarchy and escalation matrix

**KU3.** importance of the individual's role in the workflow

**KU4.** organisational norms on health, safety and sustainability

**KU5.** work area inspection procedures and practices

**KU6.** professional etiquette and grooming

**KU7.** communication etiquette across communicative mediums (online, digital, and in-person) including strategies/methods for sharing information, documentation, and providing and receiving feedback

**KU8.** importance of self-evaluations and developing a continuous learning and professional development plan

- KU9.** developments and trends impacting professional practice
- KU10.** importance of taking and using feedback from colleagues and clients to identify and introduce improvements in work performance
- KU11.** professional ethics and workplace norms on reporting and/or penalizing unethical behaviour and practices.
- KU12.** guidelines and legal requirements on disclosure, confidentiality, and conflicts of interest
- KU13.** strategies for collaboration with colleagues and clients.
- KU14.** professional responses and strategies against inappropriate language or behaviour toward self and others
- KU15.** Implicit bias (based on gender, disability, class, caste, colour, race, culture, religion, etc.) and its consequences in the workplace
- KU16.** organizational guidelines, prevalent legislations and accessibility norms and processes to support PwDs at the workplace
- KU17.** strategies for time, effort and resource allocation towards the goals.
- KU18.** basic concepts of work productivity including waste reduction, efficient material usage and optimization of time

## **Generic Skills (GS)**

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

- GS1.** complete documentation and forms such as work orders, invoices maintenance records activity logs, attendance sheets as per organizational format in English and/or local language
- GS2.** write basic accident or incident report accurately in an appropriate format
- GS3.** read warnings, instructions and other text material on product labels, components, etc. and relevant signages, warnings, labels or descriptions on equipment, etc. while carrying out work activities
- GS4.** convey and share technical information clearly using appropriate language
- GS5.** clarify task-related information
- GS6.** liaise with authorities and supervisors as per organizational protocol
- GS7.** listen, speak, and write in an inclusive, respectful manner in line with organizational protocol
- GS8.** seek clarification from immediate supervisor or responsible authority or exercise most appropriate solutions to safety breaches at work
- GS9.** report to the supervisor and when to deal with a colleague depending on the type of concern
- GS10.** deliver product to next work process on time
- GS11.** improve work process and report potential areas of delays and disruptions
- GS12.** communicate problems appropriately to others
- GS13.** identify symptoms of the fault to the cause of the problem and resolve, otherwise seek assistance and support from other sources to solve the problem
- GS14.** anticipate and avoid hazards that may occur during repairs because of tools, materials used or repair processes
- GS15.** complete tasks efficiently and accurately within stipulated time
- GS16.** appreciate and respect social diversity in all professional settings
- GS17.** develop awareness and accountability for perspectives on gender, disabilities, and socio-cultural issues leading to discrimination, bias, or harassment at the workplace

**GS18.** maintain positive and effective relationships with colleagues and customers

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Communicate effectively at the workplace</i>	<b>5</b>	<b>13</b>	-	-
<b>PC1.</b> exchange information and instruction with colleagues, and seek clarifications and feedback as necessary	1	3	-	-
<b>PC2.</b> assist colleagues where required	1	3	-	-
<b>PC3.</b> follow business communication etiquette in all interactions and communicative formats (online, digital, and in-person)	1	4	-	-
<b>PC4.</b> document and share all relevant information with stakeholders in agreed formats and as per agreed timelines	2	3	-	-
<i>Work effectively</i>	<b>6</b>	<b>13</b>	-	-
<b>PC5.</b> identify and obtain clarity regarding organisational, team and own goals and targets	1	2	-	-
<b>PC6.</b> prioritise and plan work in order to achieve goals and targets	1	2	-	-
<b>PC7.</b> monitor own and team performance as per agreed plan	1	2	-	-
<b>PC8.</b> complete duties accurately, systematically and within required timeframes	1	2	-	-
<b>PC9.</b> express emotions appropriately at the workplace and manage own response to heightened emotions	1	2	-	-
<b>PC10.</b> maintain orderliness and cleanliness in the work area	1	3	-	-
<i>Maintain and enhance professional competence</i>	<b>8</b>	<b>7</b>	-	-
<b>PC11.</b> identify own strengths and weaknesses in relation to goals and targets	1	1	-	-
<b>PC12.</b> adapt self, service, or product to meet success criteria	1	1	-	-
<b>PC13.</b> seek and select opportunities for continuous professional development	1	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC14.</b> formulate a professional development plan to enhance capabilities	2	1	-	-
<b>PC15.</b> build or contribute to the organizational knowledge base of cases, clients, issues, solutions, and innovations	1	1	-	-
<b>PC16.</b> examine developments and trends in field of work and their potential impact on work	1	1	-	-
<b>PC17.</b> take feedback from peers, supervisors and clients to improve own performance and practices	1	1	-	-
<i>Work in a disciplined and ethical manner</i>	<b>11</b>	<b>16</b>	-	-
<b>PC18.</b> perform tasks as per workplace standards, organisational policies and legislative requirements	2	2	-	-
<b>PC19.</b> display appropriate professional appearance at the workplace and adhere to the organisational dress code	1	2	-	-
<b>PC20.</b> demonstrate responsible and disciplined behaviour at the workplace such as punctuality; completing tasks as per given time and standards; demonstrating professional behaviour at all times, adopting environment- friendly practices, etc.	1	2	-	-
<b>PC21.</b> identify the cause of conflict and options for resolution with peers or escalate grievances and problems to appropriate authority as per procedure for conflict resolution	2	2	-	-
<b>PC22.</b> protect the rights of the client and organisation when delivering services	1	2	-	-
<b>PC23.</b> ensure services are delivered equally to all clients regardless of personal and cultural beliefs	1	2	-	-
<b>PC24.</b> operate within an agreed ethical code of practice and report unethical conduct to the appropriate authorities	2	2	-	-
<b>PC25.</b> follow organisational guidelines and legal requirements on disclosure and confidentiality	1	2	-	-
<i>Uphold social diversity at the workplace</i>	<b>10</b>	<b>11</b>	-	-



Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC26.</b> recognize and evaluate biased practices against underrepresented groups like women and persons with disabilities, in workplace systems and processes	2	2	-	-
<b>PC27.</b> identify and report discrimination and harassment based on gender, disability, or cultural difference at the workplace	2	2	-	-
<b>PC28.</b> use inclusive or neutral language and gestures in all interactions	2	2	-	-
<b>PC29.</b> respect the personal and professional space of others	2	2	-	-
<b>PC30.</b> access grievance redressal mechanisms as per legislations	2	3	-	-
<b>NOS Total</b>	<b>40</b>	<b>60</b>	-	-

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ELE/N9905
<b>NOS Name</b>	Work effectively at the workplace
<b>Sector</b>	Electronics
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic - Organizational Behaviour
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	24/02/2022
<b>Next Review Date</b>	30/12/2026
<b>NSQC Clearance Date</b>	30/12/2021

## ELE/N1002: Apply health and safety practices at the workplace

### Description

This OS unit is about knowledge and practices relating to health, safety and security that candidates need to use in the workplace.

### Scope

The scope covers the following :

- Deal with workplace hazards
- Apply fire safety practices
- Follow emergencies, rescue and first-aid procedures
- Effective waste management/recycling practices

### Elements and Performance Criteria

#### *Deal with workplace hazards*

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

- PC1.** identify job-site hazards and possible causes of accident in the workplace
- PC2.** perform work complying to organizational safe working practices and observing hazard signs displayed on containers, equipment and in various work areas such as inside buildings, in open areas and public spaces, etc.
- PC3.** use appropriate personal protective equipment (PPE) for specific tasks and work conditions, contaminant (concentration w.r.t air) requirements and severity of hazard while conforming to the Indian/International standards
- PC4.** follow standard safety procedures while handling tool/ ,equipment, hazardous substances and while working in hazardous environments
- PC5.** dispose electronic waste (such as toxins; metals such as lead, cadmium, barium; flame retardant plastics, welding slag etc.) as per industry approved techniques
- PC6.** avoid damage of components due to negligence in electrostatic discharge (ESD) procedures
- PC7.** locate general health and safety equipment in the workplace such as fire extinguishers; first aid equipment; safety instruments, clothing and installations (fire exits, exhaust fans)
- PC8.** maintain appropriate posture while handling heavy objects
- PC9.** apply good housekeeping practices at all times

#### *Apply fire safety practices*

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

- PC10.** take preventive measures to prevent fire hazards
- PC11.**
  - use appropriate fire extinguishers for different types of fires
  - Types of fires: Class A: e.g. ordinary solid combustibles, such as wood, paper, cloth, plastic, charcoal, etc.; Class B: flammable liquids and gases, such as gasoline, propane, diesel fuel, tar, cooking oil, and similar substances; Class C: e.g. electrical equipment such as appliances, wiring, breaker panels, etc. (These categories of fires become Class A, B, and D fires when the electrical equipment that initiated the fire is no I
- PC12.** exhibit rescue and first-aid techniques in case of fire or electrocution

#### *Follow emergencies, rescue and first-aid procedures*

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

- PC13.** administer appropriate first aid to victims in case of bleeding, burns, choking, electric shock, poisoning etc.
- PC14.** administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock,
- PC15.** participate regularly in emergency procedures such as raising alarm, safe/efficient, evacuation, correct means of taking shelter and escaping, correct assembly point, roll call, correct return to work
- PC16.** use correct method to move injured people and others during an emergency

#### *Effective waste management/recycling practices*

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

- PC17.** identify recyclable and non-recyclable, and hazardous waste generated
- PC18.** segregate waste into different categories
- PC19.** ensure disposal of non-recyclable waste appropriately
- PC20.** deposit non-recyclable and reusable material at identified location
- PC21.** follow processes specified for disposal of hazardous waste

### **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

- KU1.** importance of working in clean and safe work environment following safety practices and procedures
- KU2.** health and safety roles and responsibilities of relevant personnel within and outside the organisation
- KU3.** key internal and external sources of health and safety information
- KU4.** basic knowledge of electronic devices and related health risks
- KU5.** meaning of hazards and risks
- KU6.** various types of health and safety hazards commonly present in the work environment such as physical hazards, electrical hazards, chemical hazards, fire hazards, equipment related hazards, health hazards, etc.
- KU7.** methods of accident prevention
- KU8.** importance of using protective clothing/equipment while working
- KU9.** general principles for identifying and controlling health and safety risks
- KU10.** main hazards and preventive as well as control measures while working with different types of equipment
- KU11.** importance of carrying out electrical and non-electrical isolation to prevent hazards from loss of machine/system/process control
- KU12.** main hazards and preventive as well as control measures when working with electrical systems or using electrical equipment
- KU13.** forms and classifications of hazardous substances
- KU14.** safe working practices while working at various hazardous sites
- KU15.** prevention and control measures to reduce risks from exposure to hazardous substances
- KU16.** health effects associated with exposure to noise and vibration and the appropriate control measures

- KU17.** precautionary activities to prevent the fire accident
- KU18.** various causes of fire such as heating of metal, spontaneous ignition, sparking, electrical eating, loose fires (smoking, welding, etc.) chemical fires etc.
- KU19.** techniques of using the different fire extinguishers
- KU20.** different methods and material to extinguish fires
- KU21.** different materials used for extinguishing fire such as sand, water, foam, CO2, dry powder
- KU22.** rescue techniques used during a fire hazard
- KU23.** various types of safety signs and their meaning
- KU24.** basic first aid treatment relevant to the common work place injuries e.g. shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries
- KU25.** contents of written accident report
- KU26.** potential injuries and ill health associated with incorrect handling of tools and equipment
- KU27.** safe lifting and carrying practices
- KU28.** potential impact to a person who is moved incorrectly
- KU29.** personal safety, health and dignity issues relating to the movement of a person by others
- KU30.** ESD measures and 5S
- KU31.** efficient utilization and management of material and water
- KU32.** ways to recognize common electrical problems and practices of conserving electricity
- KU33.** usage of different colours of dustbins, categorization of waste into dry, wet, recyclable, nonrecyclable and items of single-use plastics
- KU34.** organization's procedure for minimizing waste
- KU35.** waste management and methods of waste disposal
- KU36.** common sources of pollution and ways to minimize it
- KU37.** names, contact information and location of people responsible for health and safety in the workplace
- KU38.** location of documents and equipment for health and safety compliance/practices in the workplace
- KU39.** safety notices, signs and instructions at workplace

## **Generic Skills (GS)**

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

- GS1.** interpret general health and safety guidelines labels, charts, signages
- GS2.** read operation manuals
- GS3.** write health and safety compliance report
- GS4.** write an accident/incident report in local language or English
- GS5.** provide an emergency or safety incident brief to seniors or relevant authorities in a calm, clear and to-the-point manner
- GS6.** communicate general health and safety guidelines to colleagues/co-workers
- GS7.** communicate appropriately with co-workers in order to clarify instructions and other issues
- GS8.** act in case of any potential hazards observed in the work place

- GS9.** plan and organize their own work schedule, work area, tools, equipment in compliance with organizational policies for health, safety and security
- GS10.** take adequate measures to ensure the safety of clients and visitors at the workplace
- GS11.** identify immediate or temporary solutions to resolve delays
- GS12.** evaluate the work area for health and safety risks or hazards
- GS13.** use cause and effect relations to anticipate potential issues, problems and their solution in the work area related to safety
- GS14.** recognise emergency and potential emergency situations
- GS15.** protect self and others from a health and safety risk or hazard
- GS16.** communicate and collaborate to incorporate sustainable practices (greening) in workplace processes
- GS17.** record data on waste disposal at workplace

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Deal with workplace hazards</i>	<b>20</b>	<b>31</b>	-	-
<b>PC1.</b> identify job-site hazards and possible causes of accident in the workplace	2	3	-	-
<b>PC2.</b> perform work complying to organizational safe working practices and observing hazard signs displayed on containers, equipment and in various work areas such as inside buildings, in open areas and public spaces, etc.	3	4	-	-
<b>PC3.</b> use appropriate personal protective equipment (PPE) for specific tasks and work conditions, contaminant (concentration w.r.t air) requirements and severity of hazard while conforming to the Indian/International standards	3	4	-	-
<b>PC4.</b> follow standard safety procedures while handling tool/ ,equipment, hazardous substances and while working in hazardous environments	3	4	-	-
<b>PC5.</b> dispose electronic waste (such as toxins; metals such as lead, cadmium, barium; flame retardant plastics, welding slag etc.) as per industry approved techniques	2	4	-	-
<b>PC6.</b> avoid damage of components due to negligence in electrostatic discharge (ESD) procedures	2	3	-	-
<b>PC7.</b> locate general health and safety equipment in the workplace such as fire extinguishers; first aid equipment; safety instruments, clothing and installations (fire exits, exhaust fans)	2	3	-	-
<b>PC8.</b> maintain appropriate posture while handling heavy objects	1	3	-	-
<b>PC9.</b> apply good housekeeping practices at all times	2	3	-	-
<i>Apply fire safety practices</i>	<b>4</b>	<b>9</b>	-	-
<b>PC10.</b> take preventive measures to prevent fire hazards	2	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC11.</b> <ul style="list-style-type: none"> <li>• use appropriate fire extinguishers for different types of fires</li> <li>• Types of fires: Class A: e.g. ordinary solid combustibles, such as wood, paper, cloth, plastic, charcoal, etc.; Class B: flammable liquids and gases, such as gasoline, propane, diesel fuel, tar, cooking oil, and similar substances; Class C: e.g. electrical equipment such as appliances, wiring, breaker panels, etc. (These categories of fires become Class A, B, and D fires when the electrical equipment that initiated the fire is no I</li> </ul>	1	3	-	-
<b>PC12.</b> exhibit rescue and first-aid techniques in case of fire or electrocution	1	3	-	-
<i>Follow emergencies, rescue and first-aid procedures</i>	<b>6</b>	<b>13</b>	-	-
<b>PC13.</b> administer appropriate first aid to victims in case of bleeding, burns, choking, electric shock, poisoning etc.	1	3	-	-
<b>PC14.</b> administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock,	1	2	-	-
<b>PC15.</b> participate regularly in emergency procedures such as raising alarm, safe/efficient, evacuation, correct means of taking shelter and escaping, correct assembly point, roll call, correct return to work	2	4	-	-
<b>PC16.</b> use correct method to move injured people and others during an emergency	2	4	-	-
<i>Effective waste management/recycling practices</i>	<b>5</b>	<b>12</b>	-	-
<b>PC17.</b> identify recyclable and non-recyclable, and hazardous waste generated	1	3	-	-
<b>PC18.</b> segregate waste into different categories	1	2	-	-
<b>PC19.</b> ensure disposal of non-recyclable waste appropriately	1	2	-	-
<b>PC20.</b> deposit non-recyclable and reusable material at identified location	1	3	-	-
<b>PC21.</b> follow processes specified for disposal of hazardous waste	1	2	-	-



Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	35	65	-	-

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ELE/N1002
<b>NOS Name</b>	Apply health and safety practices at the workplace
<b>Sector</b>	Electronics
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic - Health Safety
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	24/02/2022
<b>Next Review Date</b>	24/02/2025
<b>NSQC Clearance Date</b>	24/02/2022

## Assessment Guidelines and Assessment Weightage

### Assessment Guidelines

Minimum 70% marks are required

### Minimum Aggregate Passing % at QP Level : 70

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

### Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
ELE/N7906.Manage quality in the product design process	30	55	-	15	100	20
ELE/N7907.Manage the supplier relationship and receipt inspection process	30	55	-	15	100	20
ELE/N7908.Manage quality in the production process and final output	30	55	-	15	100	20
ELE/N7909.Manage recruitment, training and drive quality initiatives for projects	30	55	-	15	100	20
ELE/N9905.Work effectively at the workplace	40	60	-	-	100	10
ELE/N1002.Apply health and safety practices at the workplace	35	65	-	-	100	10
<b>Total</b>	<b>195</b>	<b>345</b>	<b>-</b>	<b>60</b>	<b>600</b>	<b>100</b>

**Acronyms**

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

## Glossary

<b>Sector</b>	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.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	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.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	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.
<b>Knowledge and Understanding (KU)</b>	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

<b>Organisational Context</b>	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.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/ Generic Skills (GS)</b>	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
<b>Electives</b>	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
<b>Options</b>	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.