Qualification Pack

Project Manager - Electronics

QP Code: ELE/Q9801

Version: 1.0

NSQF Level: 7

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Contents

ELE/Q9801: Project Manager - Electronics

Brief Job Description

A Project Manager - Electronics is responsible for planning, overseeing and leading projects from ideation to completion. This includes liaison with the project stakeholders and third-party vendors to ensure timely and successful delivery of projects. The individual may be responsible for managing multiple projects according to the size of the organisation.

Personal Attributes

The individual must have managerial, organisational and problem-solving skills. The person must have good written and verbal communication skills with the ability to multi-task and coordinate with multiple parties simultaneously to achieve the work objectives.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. ELE/N9801: Carry out project initiation and planning

2. ELE/N9802: Carry out execution, monitoring, control and closure of the project

3. ELE/N9905: Work effectively at the workplace

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

Qualification Pack (QP) Parameters

Sector	Electronics
Sub-Sector	Generic
Occupation	Generic - Planning & Management
Country	India
NSQF Level	7
Credits	NA
Aligned to NCO/ISCO/ISIC Code	NCO-2016/NIL

Minimum Educational Qualification & Experience	Diploma (after 12th in relevant trade) with 6 Years of experience in the relevant field OR B.E./B.Tech ((Degree in Electrical or Electronics Engineering) with 04 Year of relevant Experience) OR (M.E/M.Tech in Electrical or Electronics Engineering) 02 years of relevant Experience)) OR Certificate-NSQF (Level-6 in Quality Manager) with 2 Years of experience in the relevant field
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	21 Years
Last Reviewed On	24/02/2022
Next Review Date	02/06/2025
Deactivation Date	02/06/2025
NSQC Approval Date	24/02/2022
Version	1.0
Reference code on NQR	2022/EHW/ESSC/05395
NQR Version	1.0

ELE/N9801: Carry out project initiation and planning

Description

This OS unit is about carrying out initiation and planning at the beginning of a project. It also covers resource planning, procurement and obtaining the necessary approvals for the project.

Scope

The scope covers the following :

- Carry out project initiation
- Carry out project planning
- Participate in resource planning and procurement
- Obtain the necessary approvals

Elements and Performance Criteria

Carry out project initiation

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

PC1. create a business case detailing the reason for starting the project

PC2. ensure the business case is easy to understand, logical and relevant, detailing the key aspects to be tracked and measured

PC3. conduct a feasibility study, identify the possible risks and issues that may be experienced during the project

PC4. document the potential solutions to the business problem that the project is proposed to address, along with the solutions for issues that may be experienced during the project

PC5. create the project charter with a comprehensive description of the project vision, objectives, scope, deliverables and limitation along with the responsibilities of the project team

PC6. identify the project stakeholders and document it in the project charter

PC7. create a project team with team members possessing the required knowledge and skills

PC8. set up the project management office, ensuring the availability of necessary communication infrastructure and technology

PC9. ensure there is accountability and commitment for the delivery and costs involved

PC10. review the project initiation phase to ensure the initiation requirements are met

Carry out project planning

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

PC11. create a work breakdown structure, breaking down the project's scope into smaller, easily manageable deliverables and groups of related tasks

PC12. determine the project activities and sequence them

PC13. estimate the activity duration, costs, and resource requirement for the project

PC14. coordinate the development of user manuals, training materials, and other documents as needed to enable the successful implementation of the project

PC15. create the contingency plan to deal with various internal and external risks to the project delivery, incorporating subsidiary plans such as scope, schedule, cost, quality, resource plans in the project plan

PC16. create a performance measurement baseline to measure and manage performance

PC17. carry out effective planning using the relevant planning tools/ software, ensuring time-bound scheduling and implementation of all critical tasks

PC18. document the project plan outlining all significant details such as the scope, schedule, and cost of the project

Participate in resource planning and procurement

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

PC19. identify various resources required for the successful delivery of the project, such as people, capital, material goods, facility, etc.

PC20. carry out negotiations with the third-party suppliers and contractors, ensuring the costs are kept within budgets

PC21. ensure timely procurement of various resources in an appropriate number/ quantity for smooth completion of the project

PC22. assign resources such as labour, equipment, space, material, technology to project activities according to the scope and level of complexity of the project

Obtain the necessary approvals

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

PC23. prepare the necessary documents in the required format to obtain the necessary permits/ approvals for the project

PC24. apply for approval from the relevant authorities, following the applicable procedures

PC25. liaise with the relevant regulatory authority to resolve any issues encountered with obtaining the required permits/ approval

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. how to create a business case

KU2. the importance of ensuring the business case is easy to understand, logical and relevant

KU3. the process of conducting a feasibility study

KU4. the importance of identifying the possible project risks and documenting the proposed solutions

KU5. how to create the project charter and the appropriate details to include

KU6. the importance of creating a project team defining the role and responsibilities of team members

KU7. the importance and process of creating the project scope statement with a comprehensive description of the project deliverables and limitations

KU8. the advantage of creating a work breakdown structure and sequencing the project activities

KU9. how to estimate the activity duration, costs, and resource requirement for the project

KU10. the importance of developing user manuals, training materials, and other documents for the successful implementation of the project

KU11. the importance and process of creating a contingency plan to deal with internal and external risks to the project and incorporating subsidiary plans such as scope, schedule, cost, quality, resource, risk management plans in the project plan

KU12. how to create a performance measurement baseline to measure and manage performance

KU13. the importance of documenting the project plan detailing as the scope, schedule and cost of the project

KU14. use of the relevant planning software tools for time-bound scheduling and implementation of all critical tasks

KU15. the process of planning and procuring resources for the project

KU16. how to carry out negotiations with the third-party suppliers and contractors

KU17. the process of obtaining the necessary approvals for a variety of projects and the relevant authorities to approach for the purpose

Generic Skills (GS)

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

GS1. prepare work-related documents and reports

GS2. communicate politely and professionally

GS3. read the relevant literature to keep abreast with the latest developments in the field of work

GS4. listen attentively to understand the client's requirements

GS5. co-ordinate with co-workers to achieve the work objectives

GS6. plan and prioritise tasks to ensure timely completion

GS7. take quick decisions to deal with workplace emergencies/ accidents

GS8. identify possible disruptions to work and take preventive measures

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out project initiation	**10**	**15**	**-**	**5**
PC1. create a business case detailing the reason for starting the project	-	-	-	-
PC2. ensure the business case is easy to understand, logical and relevant, detailing the key aspects to be tracked and measured	-	-	-	-
PC3. conduct a feasibility study, identify the possible risks and issues that may be experienced during the project	-	-	-	-
PC4. document the potential solutions to the business problem that the project is proposed to address, along with the solutions for issues that may be experienced during the project	-	-	-	-
PC5. create the project charter with a comprehensive description of the project vision, objectives, scope, deliverables and limitation along with the responsibilities of the project team	-	-	-	-
PC6. identify the project stakeholders and document it in the project charter	-	-	-	-
PC7. create a project team with team members possessing the required knowledge and skills	-	-	-	-
PC8. set up the project management office, ensuring the availability of necessary communication infrastructure and technology	-	-	-	-
PC9. ensure there is accountability and commitment for the delivery and costs involved	-	-	-	-
PC10. review the project initiation phase to ensure the initiation requirements are met	-	-	-	-
Carry out project planning	**12**	**20**	**-**	**5**
PC11. create a work breakdown structure, breaking down the project's scope into smaller, easily manageable deliverables and groups of related tasks	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. determine the project activities and sequence them	-	-	-	-
PC13. estimate the activity duration, costs, and resource requirement for the project	-	-	-	-
PC14. coordinate the development of user manuals, training materials, and other documents as needed to enable the successful implementation of the project	-	-	-	-
PC15. create the contingency plan to deal with various internal and external risks to the project delivery, incorporating subsidiary plans such as scope, schedule, cost, quality, resource plans in the project plan	-	-	-	-
PC16. create a performance measurement baseline to measure and manage performance	-	-	-	-
PC17. carry out effective planning using the relevant planning tools/ software, ensuring time-bound scheduling and implementation of all critical tasks	-	-	-	-
PC18. document the project plan outlining all significant details such as the scope, schedule, and cost of the project	-	-	-	-
Participate in resource planning and procurement	**5**	**10**	**-**	**3**
PC19. identify various resources required for the successful delivery of the project, such as people, capital, material goods, facility, etc.	-	-	-	-
PC20. carry out negotiations with the third-party suppliers and contractors, ensuring the costs are kept within budgets	-	-	-	-
PC21. ensure timely procurement of various resources in an appropriate number/ quantity for smooth completion of the project	-	-	-	-
PC22. assign resources such as labour, equipment, space, material, technology to project activities according to the scope and level of complexity of the project	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Obtain the necessary approvals	**3**	**10**	**-**	**2**
PC23. prepare the necessary documents in the required format to obtain the necessary permits/ approvals for the project	-	-	-	-
PC24. apply for approval from the relevant authorities, following the applicable procedures	-	-	-	-
PC25. liaise with the relevant regulatory authority to resolve any issues encountered with obtaining the required permits/ approval	-	-	-	-
NOS Total	**30**	**55**	**-**	**15**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N9801
NOS Name	Carry out project initiation and planning
Sector	Electronics
Sub-Sector	Generic
Occupation	Generic - Planning & Management
NSQF Level	7
Credits	TBD
Version	1.0
Last Reviewed Date	24/02/2022
Next Review Date	02/06/2025
NSQC Clearance Date	24/02/2022

ELE/N9802: Carry out execution, monitoring, control and closure of the project

Description

This OS unit is about managing the project execution along with monitoring and controlling it. It also covers carrying out project closure.

Scope

The scope covers the following :

- Manage the project execution
- Monitor and control the project
- Carry out project closure

Elements and Performance Criteria

Manage the project execution

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

PC1. conduct the kick-off meeting with the project team to apprise them of the project timelines, deliverables, scope and budgets

PC2. ensure the participation of all the stakeholders in the meeting

PC3. set deadlines and ensure the availability of necessary resources

PC4. manage the execution of each stage of the project

PC5. coordinate the internal resources and third parties/ vendors for the flawless execution of the project

PC6. maintain effective relationships and regular communication with the project team members and stakeholders to identify any issues, and provide timely resolution

PC7. collect data related to the project's progress from the team members and prepare the status report

PC8. analyse the data and reports to identify the relevant course-corrective action and obtain the necessary approvals from the relevant stakeholders

PC9. use the appropriate verification techniques to manage changes in project scope, schedule and costs

PC10. identify risks to project execution and take the necessary action as documented in the risk management plan

PC11. ensure the applicable health, safety and environmental protection practices are followed in compliance with the regulatory requirements

PC12. follow the applicable practices for effective site, logistics and infrastructure management

PC13. follow the established invoicing process to ensure positive cash flows for uninterrupted progress of the project

PC14. identify and implement relevant solutions to add value to the project such as enhancing quality while reducing the costs

Monitor and control the project

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

PC15. monitor the project planning parameters such as the schedule, timeline, effort, costing, defects etc.

PC16. moderate the spending and reallocate funds if necessary, ensuring the project costs do not exceed the budget

PC17. use the appropriate project management software to monitor project schedule, slippages and their impact

PC18. track the commitments and involve all the stakeholders such as the team members, management, peers, third party vendors and client through meetings, status reporting, progress and milestone reviews, etc.

PC19. review the roles and responsibilities of the team members and reassign, as required

PC20. guide the project team and take executable decisions regarding further actions throughout the project

PC21. perform quality control management as per the quality review schedule and document the actions agreed

PC22. ensure that appropriate follow-up actions are taken based on quality reviews

PC23. monitor various risks such as internal, client and vendor risks, tools and technology risks, etc.

PC24. monitor data management to ensure that only authorised personnel have access to critical data and there are sufficient data protection measures in place

PC25. prepare various status reports and share them with the relevant stakeholders

PC26. record the project progress in the appropriate software tool

PC27. initiate the required corrective action based on progress reviews to control the project progress as per the project plans and deal with any deviations in project implementation, tracking the corrective actions until the progress is under control or the project closure

Carry out project closure

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

PC28. deliver the project as per the agreed timelines and budget

PC29. identify all deliverables by going through the project plan and ensure they have been fully completed and handed off

PC30. verify the completion by obtaining approval for the project deliverables from all the stakeholders with official sign-offs

PC31. finalise and transfer the project deliverables to the client

PC32. review all contracts and documentation to ensure all parties have been paid for the work and there are no outstanding invoices

PC33. release resources such as suppliers, contractors, team members, and any other partners from the project, following the formal release process

PC34. notify all the stakeholders of the end of the project, ensuring final payments and obligations are completed

PC35. conduct the project performance review and document the successes, failures, and challenges of the project, along with feedback of the stakeholders

PC36. calculate the project's performance in terms of cost, schedule and quality

PC37. identify opportunities for improvement for future projects

PC38. archive all the project related documents as per the organisational procedure

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the importance of conducting the kick-off meeting with all the stakeholders to apprise them of the project timelines, deliverables, scope and budgets

KU2. the process of assigning tasks and responsibilities to the team members, setting deadlines and ensuring the availability of necessary resources

KU3. the importance of coordinating the internal resources and third parties/ vendors for the flawless execution of the project

KU4. the importance of maintaining an effective relationship, open and regular communication with the project stakeholders

KU5. the process of collecting the project's progress data and preparing the status report

KU6. the importance and process of analysing the data and reports for identifying and taking the relevant course-corrective measures, based on progress reviews to control the project progress

KU7. use of the appropriate verification techniques to manage changes in the project scope, schedule and costs

KU8. how to identify risks to project execution and dealing with them as per the risk management plan

KU9. the importance of adhering to the approved budget and timelines

KU10. the process of re-allocating the project funds

KU11. the importance of following the applicable health, safety and environment protection practices

KU12. use of the appropriate project management software to monitor project schedule, slippages and their impact, and preparing various status reports and recording the project progress

KU13. applicable practices for effective site, logistics and infrastructure management

KU14. the importance of ensuring positive cash flows for uninterrupted progress of the project

KU15. the importance of delivering the project as per the agreed timelines and budget

KU16. the importance of monitoring the project planning parameters such as the schedule, timeline, effort, costing, defects etc.

KU17. the process of tracking the commitments and involvement of all the stakeholders through meetings, status reporting, progress and milestones reviews, etc.

KU18. the importance and process of reviewing and reassigning the roles and responsibilities of the team members

KU19. applicable quality control management practices and the importance of ensuring that appropriate follow-up actions are taken based on quality reviews

KU20. the importance of monitoring various risks such as internal, client and vendor risks, tools and technology risks, etc.

KU21. the importance of ensuring adequate data protection measures and allowing access to critical data only that only to the authorised personnel

KU22. the importance of ensuring all deliverables are fully completed and handed off at the project closure stage

KU23. the process of finalising and transferring the project deliverables to the client

KU24. the importance and process of reviewing all contracts and documentation

KU25. the process of invoicing the client

KU26. the importance and process of releasing various project resources such as suppliers, contractors, team members, and any other partners

KU27. the importance of notifying all the stakeholders of the end of the project and ensuring final payments and obligations are completed

KU28. the importance and process of conducting project performance review and documenting the successes, failures, and challenges of the project

KU29. how to calculate the project's performance in terms of cost, schedule and quality

KU30. the importance of taking feedback from the project management team and identifying the scope of improvement

KU31. the process of reviewing, finalising and archiving the project-related documents

Generic Skills (GS)

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

GS1. write work-related notes and maintain records

GS2. read the relevant literature to learn about the latest developments in the field of work

GS3. listen attentively to understand the information being shared

GS4. communicate politely and professionally

GS5. plan and schedule tasks for effective time-management

GS6. take quick decisions within the limits of authority to deal with workplace emergencies/ accidents

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
Manage the project execution	**12**	**25**	**-**	**5**
PC1. conduct the kick-off meeting with the project team to apprise them of the project timelines, deliverables, scope and budgets	-	-	-	-
PC2. ensure the participation of all the stakeholders in the meeting	-	-	-	-
PC3. set deadlines and ensure the availability of necessary resources	-	-	-	-
PC4. manage the execution of each stage of the project	-	-	-	-
PC5. coordinate the internal resources and third parties/ vendors for the flawless execution of the project	-	-	-	-
PC6. maintain effective relationships and regular communication with the project team members and stakeholders to identify any issues, and provide timely resolution	-	-	-	-
PC7. collect data related to the project's progress from the team members and prepare the status report	-	-	-	-
PC8. analyse the data and reports to identify the relevant course-corrective action and obtain the necessary approvals from the relevant stakeholders	-	-	-	-
PC9. use the appropriate verification techniques to manage changes in project scope, schedule and costs	-	-	-	-
PC10. identify risks to project execution and take the necessary action as documented in the risk management plan	-	-	-	-
PC11. ensure the applicable health, safety and environmental protection practices are followed in compliance with the regulatory requirements	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. follow the applicable practices for effective site, logistics and infrastructure management	-	-	-	-
PC13. follow the established invoicing process to ensure positive cash flows for uninterrupted progress of the project	-	-	-	-
PC14. identify and implement relevant solutions to add value to the project such as enhancing quality while reducing the costs	-	-	-	-
Monitor and control the project	**10**	**20**	**-**	**5**
PC15. monitor the project planning parameters such as the schedule, timeline, effort, costing, defects etc.	-	-	-	-
PC16. moderate the spending and reallocate funds if necessary, ensuring the project costs do not exceed the budget	-	-	-	-
PC17. use the appropriate project management software to monitor project schedule, slippages and their impact	-	-	-	-
PC18. track the commitments and involve all the stakeholders such as the team members, management, peers, third party vendors and client through meetings, status reporting, progress and milestone reviews, etc.	-	-	-	-
PC19. review the roles and responsibilities of the team members and reassign, as required	-	-	-	-
PC20. guide the project team and take executable decisions regarding further actions throughout the project	-	-	-	-
PC21. perform quality control management as per the quality review schedule and document the actions agreed	-	-	-	-
PC22. ensure that appropriate follow-up actions are taken based on quality reviews	-	-	-	-
PC23. monitor various risks such as internal, client and vendor risks, tools and technology risks, etc.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC24. monitor data management to ensure that only authorised personnel have access to critical data and there are sufficient data protection measures in place	-	-	-	-
PC25. prepare various status reports and share them with the relevant stakeholders	-	-	-	-
PC26. record the project progress in the appropriate software tool	-	-	-	-
PC27. initiate the required corrective action based on progress reviews to control the project progress as per the project plans and deal with any deviations in project implementation, tracking the corrective actions until the progress is under control or the project closure	-	-	-	-
Carry out project closure	**8**	**10**	**-**	**5**
PC28. deliver the project as per the agreed timelines and budget	-	-	-	-
PC29. identify all deliverables by going through the project plan and ensure they have been fully completed and handed off	-	-	-	-
PC30. verify the completion by obtaining approval for the project deliverables from all the stakeholders with official sign-offs	-	-	-	-
PC31. finalise and transfer the project deliverables to the client	-	-	-	-
PC32. review all contracts and documentation to ensure all parties have been paid for the work and there are no outstanding invoices	-	-	-	-
PC33. release resources such as suppliers, contractors, team members, and any other partners from the project, following the formal release process	-	-	-	-
PC34. notify all the stakeholders of the end of the project, ensuring final payments and obligations are completed	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC35. conduct the project performance review and document the successes, failures, and challenges of the project, along with feedback of the stakeholders	-	-	-	-
PC36. calculate the project's performance in terms of cost, schedule and quality	-	-	-	-
PC37. identify opportunities for improvement for future projects	-	-	-	-
PC38. archive all the project related documents as per the organisational procedure	-	-	-	-
NOS Total	**30**	**55**	**-**	**15**

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N9802
NOS Name	Carry out execution, monitoring, control and closure of the project
Sector	Electronics
Sub-Sector	Generic
Occupation	Generic - Planning & Management
NSQF Level	7
Credits	TBD
Version	1.0
Last Reviewed Date	24/02/2022
Next Review Date	02/06/2025
NSQC Clearance Date	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
Communicate effectively at the workplace	**5**	**13**	**-**	**-**
PC1. exchange information and instruction with colleagues, and seek clarifications and feedback as necessary	1	3	-	-
PC2. assist colleagues where required	1	3	-	-
PC3. follow business communication etiquette in all interactions and communicative formats (online, digital, and in-person)	1	4	-	-
PC4. document and share all relevant information with stakeholders in agreed formats and as per agreed timelines	2	3	-	-
Work effectively	**6**	**13**	**-**	**-**
PC5. identify and obtain clarity regarding organisational, team and own goals and targets	1	2	-	-
PC6. prioritise and plan work in order to achieve goals and targets	1	2	-	-
PC7. monitor own and team performance as per agreed plan	1	2	-	-
PC8. complete duties accurately, systematically and within required timeframes	1	2	-	-
PC9. express emotions appropriately at the workplace and manage own response to heightened emotions	1	2	-	-
PC10. maintain orderliness and cleanliness in the work area	1	3	-	-
Maintain and enhance professional competence	**8**	**7**	**-**	**-**
PC11. identify own strengths and weaknesses in relation to goals and targets	1	1	-	-
PC12. adapt self, service, or product to meet success criteria	1	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. seek and select opportunities for continuous professional development	1	1	-	-
PC14. formulate a professional development plan to enhance capabilities	2	1	-	-
PC15. build or contribute to the organizational knowledge base of cases, clients, issues, solutions, and innovations	1	1	-	-
PC16. examine developments and trends in field of work and their potential impact on work	1	1	-	-
PC17. take feedback from peers, supervisors and clients to improve own performance and practices	1	1	-	-
Work in a disciplined and ethical manner	**11**	**16**	**-**	**-**
PC18. perform tasks as per workplace standards, organisational policies and legislative requirements	2	2	-	-
PC19. display appropriate professional appearance at the workplace and adhere to the organisational dress code	1	2	-	-
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.	1	2	-	-
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	2	2	-	-
PC22. protect the rights of the client and organisation when delivering services	1	2	-	-
PC23. ensure services are delivered equally to all clients regardless of personal and cultural beliefs	1	2	-	-
PC24. operate within an agreed ethical code of practice and report unethical conduct to the appropriate authorities	2	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. follow organisational guidelines and legal requirements on disclosure and confidentiality	1	2	-	-
Uphold social diversity at the workplace	**10**	**11**	**-**	**-**
PC26. recognize and evaluate biased practices against underrepresented groups like women and persons with disabilities, in workplace systems and processes	2	2	-	-
PC27. identify and report discrimination and harassment based on gender, disability, or cultural difference at the workplace	2	2	-	-
PC28. use inclusive or neutral language and gestures in all interactions	2	2	-	-
PC29. respect the personal and professional space of others	2	2	-	-
PC30. access grievance redressal mechanisms as per legislations	2	3	-	-
NOS Total	**40**	**60**	**-**	**-**

Qualification Pack

National Occupational Standards (NOS) Parameters

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

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 handing 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
Deal with workplace hazards	**20**	**31**	**-**	**-**
PC1. identify job-site hazards and possible causes of accident in the workplace	2	3	-	-
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.	3	4	-	-
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	3	4	-	-
PC4. follow standard safety procedures while handling tool/ ,equipment, hazardous substances and while working in hazardous environments	3	4	-	-
PC5. 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	-	-
PC6. avoid damage of components due to negligence in electrostatic discharge (ESD) procedures	2	3	-	-
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)	2	3	-	-
PC8. maintain appropriate posture while handling heavy objects	1	3	-	-
PC9. apply good housekeeping practices at all times	2	3	-	-
Apply fire safety practices	**4**	**9**	**-**	**-**
PC10. take preventive measures to prevent fire hazards	2	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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 l	1	3	-	-
PC12. exhibit rescue and first-aid techniques in case of fire or electrocution	1	3	-	-
Follow emergencies, rescue and first-aid procedures	**6**	**13**	**-**	**-**
PC13. administer appropriate first aid to victims in case of bleeding, burns, choking, electric shock, poisoning etc.	1	3	-	-
PC14. administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock,	1	2	-	-
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	2	4	-	-
PC16. use correct method to move injured people and others during an emergency	2	4	-	-
Effective waste management/recycling practices	**5**	**12**	**-**	**-**
PC17. identify recyclable and non-recyclable, and hazardous waste generated	1	3	-	-
PC18. segregate waste into different categories	1	2	-	-
PC19. ensure disposal of non-recyclable waste appropriately	1	2	-	-
PC20. deposit non-recyclable and reusable material at identified location	1	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. follow processes specified for disposal of hazardous waste	1	2	-	-
NOS Total	**35**	**65**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N1002
NOS Name	Apply health and safety practices at the workplace
Sector	Electronics
Sub-Sector	Generic
Occupation	Generic - Health Safety
NSQF Level	4
Credits	TBD
Version	3.0
Last Reviewed Date	24/02/2022
Next Review Date	03/05/2026
NSQC Clearance Date	03/05/2023

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/N9801.Carry out project initiation and planning	30	55	-	15	100	35
ELE/N9802.Carry out execution, monitoring, control and closure of the project	30	55	-	15	100	35
ELE/N9905.Work effectively at the workplace	40	60	-	-	100	15
ELE/N1002.Apply health and safety practices at the workplace	35	65	-	-	100	15
Total	**135**	**235**	**-**	**30**	**400**	**100**

Acronyms

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

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.