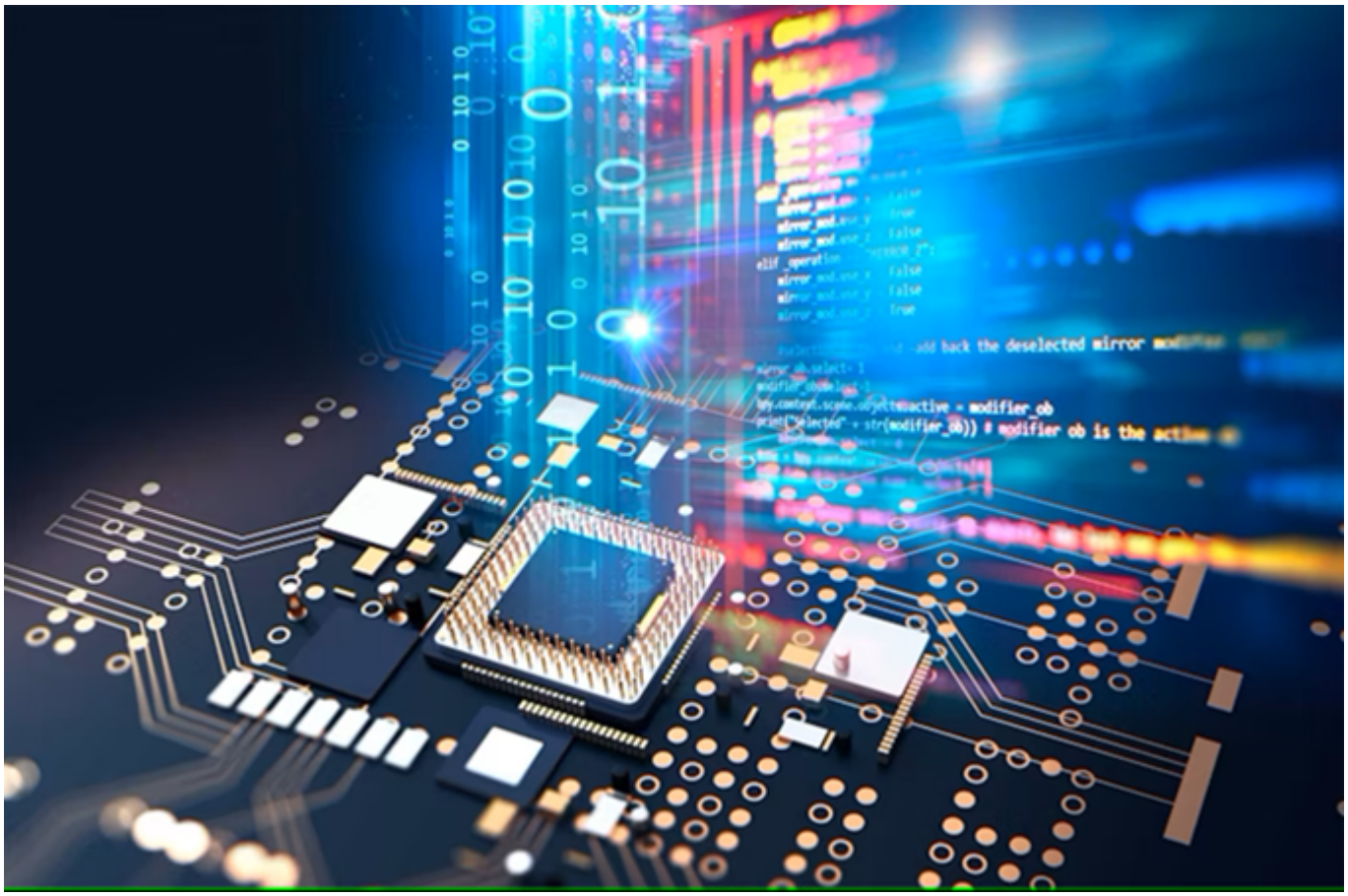
Qualification Pack



Embedded Software Engineer

QP Code: ELE/Q1501

Version: 4.0

NSQF Level: 5

Electronics Sector Skills Council of India || 155, 2nd Floor, ESC House Okhla Industrial Area-Phase 3
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Qualification Pack

ELE/Q1501: Embedded Software Engineer

Brief Job Description

An Embedded Software Engineer is responsible for assessing the embedded systems specification requirement, develops software, tests and validates the software in coordination with design engineers for system integration.

Personal Attributes

The job requires the individual to have attention to details, good communication skills, logical thinking and ability to work for long hours on computer.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. ELE/N1508: Understanding Project Needs Analysis and System Design using Agile and MBSE
2. ELE/N1509: Embedded Software Development with Modular Tools
3. ELE/N1510: Structured Digital Documentation with Quality and Traceability
4. DGT/VSQ/N0102: Employability Skills (60 Hours)

Qualification Pack (QP) Parameters

Sector	Electronics
Sub-Sector	Semiconductor & Components
Occupation	System Software Development-S&C
Country	India
NSQF Level	5
Credits	19
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2512.0501

Qualification Pack

Minimum Educational Qualification & Experience	Completed 2nd year of UG (UG Diploma) (Physics/Electronics/Electrical/Computer Science) with 1.5 years of experience Relevant Experience in Semiconductor & Components OR Completed 3 year diploma after 10th (Electronics/Electrical/Computer Science) with 3 Years of experience Relevant Experience in Semiconductor & Components OR Previous relevant Qualification of NSQF Level (4.5) with 1.5 years of experience Relevant Experience in Semiconductor & Components
Minimum Level of Education for Training in School	10th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	30/04/2028
NSQC Approval Date	08/05/2025
Version	4.0
Reference code on NQR	QG-05-EH-03972-2025-V4-ESSCI
NQR Version	4.0

Remarks:

NA

Qualification Pack

ELE/N1508: Understanding Project Needs Analysis and System Design using Agile and MBSE

Description

This NOS unit is about plan and execute embedded software development by interpreting system requirements, using Agile practices and collaborative tools, ensuring compliance with cybersecurity standards, and leveraging MBSE and IoT design platforms.

Scope

The scope covers the following :

- Identifying the work requirement
- Identifying the system design specifications

Elements and Performance Criteria

Identifying the work requirement

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

PC1. Interact with the lead engineer for understanding the work schedules, shifts, and delivery dates using collaborative tools like JIRA, Trello, or Asana.

PC2. Identify and plan the work activities for software development, incorporating Agile methodologies and tools such as Scrum boards and Kanban charts to optimize workflow and deliverables.

PC3. Comply with organization’s policies, procedures, and guidelines when developing embedded system software codes ensuring adherence to cybersecurity standards (e.g., ISO 27001, AUTOSAR Security)

Identifying the system design specifications

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

PC4. Interact with the lead engineer and embedded system design engineers to understand the system and software requirements Model-Based System Engineering (MBSE) tools such as MATLAB/Simulink or Enterprise Architect.

PC5. Read and interpret the Business Requirement Specification (BRS) and Software Requirement Specification (SRS) document for interpreting the project specifications, coding, testing and debugging requirements leveraging Natural Language Processing (NLP)-based requirement analysis tools.

PC6. Identify the circuit design, functionality and logic involved in the embedded system software using IoT-specific design tools and cloud simulation platforms like AWS IoT Core or Azure IoT Hub.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Fundamentals of embedded systems and software development life cycle.

KU2. Agile methodologies (e.g., Scrum, Kanban) and workflow management tools like JIRA, Trello, or Asana.

KU3. Organizational policies, coding standards, and cybersecurity frameworks such as ISO 27001 and AUTOSAR Security.

KU4. Model-Based Systems Engineering (MBSE) concepts and tools like MATLAB/Simulink and Enterprise Architect.

KU5. Structure and interpretation of Business Requirement Specifications (BRS) and Software Requirement Specifications (SRS).

KU6. Use of Natural Language Processing (NLP)-based tools for analyzing software requirements.

KU7. IoT-specific design platforms and cloud simulation tools like AWS IoT Core and Azure IoT Hub.

KU8. Circuit design principles and how they relate to embedded software functionality.

KU9. Project planning and scheduling techniques in embedded software projects.

KU10. Communication protocols and integration techniques for embedded system components.

Generic Skills (GS)

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

GS1. Effective communication for interacting with engineering teams and interpreting specifications.

GS2. Team collaboration and coordination in Agile environments.

GS3. Analytical thinking to interpret system specifications and identify software logic.

GS4. Problem-solving skills for planning, debugging, and adapting to changing requirements.

GS5. Time management to plan tasks and meet delivery schedules.

GS6. Adaptability in working with evolving technologies, tools, and processes.

GS7. Attention to detail in interpreting requirement documents and system logic.

GS8. Initiative and innovation in using advanced tools like NLP and cloud-based simulation.

GS9. Ethical understanding to ensure compliance with cybersecurity and organizational standards.

GS10. Documentation and reporting skills for tracking development progress and compliance.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Identifying the work requirement	**20**	**30**	**-**	**-**
PC1. Interact with the lead engineer for understanding the work schedules, shifts, and delivery dates using collaborative tools like JIRA, Trello, or Asana.	-	-	-	-
PC2. Identify and plan the work activities for software development, incorporating Agile methodologies and tools such as Scrum boards and Kanban charts to optimize workflow and deliverables.	-	-	-	-
PC3. Comply with organization's policies, procedures, and guidelines when developing embedded system software codes ensuring adherence to cybersecurity standards (e.g., ISO 27001, AUTOSAR Security)	-	-	-	-
Identifying the system design specifications	**20**	**30**	**-**	**-**
PC4. Interact with the lead engineer and embedded system design engineers to understand the system and software requirements Model-Based System Engineering (MBSE) tools such as MATLAB/Simulink or Enterprise Architect.	-	-	-	-
PC5. Read and interpret the Business Requirement Specification (BRS) and Software Requirement Specification (SRS) document for interpreting the project specifications, coding, testing and debugging requirements leveraging Natural Language Processing (NLP)-based requirement analysis tools.	-	-	-	-
PC6. Identify the circuit design, functionality and logic involved in the embedded system software using IoT-specific design tools and cloud simulation platforms like AWS IoT Core or Azure IoT Hub.	-	-	-	-
NOS Total	**40**	**60**	**-**	**-**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N1508
NOS Name	Understanding Project Needs Analysis and System Design using Agile and MBSE
Sector	Electronics
Sub-Sector	
Occupation	System Software Development-S&C
NSQF Level	5
Credits	6
Version	1.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025

Qualification Pack

ELE/N1509: Embedded Software Development with Modular Tools

Description

This NOS unit is about design, develop, test, and validate embedded system software using modular coding practices, RTOS standards, CI/CD pipelines, and Digital Twin technology, ensuring compliance with specifications and organizational quality standards.

Scope

The scope covers the following :

- Developing software for embedded system

Elements and Performance Criteria

Developing software for embedded system

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

PC1. Create a software design for the embedded system as per requirement specification and get approval from superior and relevant department on the same

PC2. Access reusable components, code generation tools and unit testing tools from company's database open-source libraries and microservices architecture for modularity.

PC3. Create software modules to meet the requirements of software adhering to Real-Time Operating System (RTOS) standards and ensuring compatibility with IoT-enabled devices.

PC4. Create Unit Test Cases (UTCs) as per the specifications and requirements

PC5. Review the code and UTCs with the support team and lead engineer for any defects

PC6. Rework on the code and UTCs to fix identified defects, ensuring compliance with Continuous Integration/Continuous Deployment (CI/CD) pipelines.

PC7. Carryout testing, verification and debugging of software codes for any errors and submit the tested codes and documents for approval as per organisational standards

PC8. Support the embedded system design engineers in system testing, product verification and validation using Digital Twin Technology for real-time simulations.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Principles of embedded software design and development lifecycle.

KU2. Interpretation of requirement specifications for embedded systems.

KU3. Use of reusable components, code generation tools, and open-source libraries for efficient software development.

KU4. Fundamentals of Real-Time Operating Systems (RTOS) and their application in embedded software.

KU5. Microservices architecture and its role in modular embedded system software design.

KU6. Unit testing methodologies and tools used to create and validate Unit Test Cases (UTCs).

KU7. Code review processes, defect identification, and debugging techniques.

KU8. CI/CD (Continuous Integration/Continuous Deployment) pipelines and their application in embedded software projects.

KU9. Techniques for software verification, validation, and documentation as per organizational standards.

KU10. Digital Twin Technology for real-time simulations, testing, and system validation.

Generic Skills (GS)

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

GS1. Analytical thinking to design and implement embedded software solutions.

GS2. Problem-solving skills for debugging and resolving software issues efficiently.

GS3. Collaboration and teamwork when working with engineers and cross-functional teams.

GS4. Communication skills to present code issues, solutions, and test results clearly.

GS5. Time management and task prioritization to meet project deadlines.

GS6. Adaptability to new technologies, libraries, and industry trends.

GS7. Attention to detail for writing, reviewing, and correcting code and test cases.

GS8. Initiative to access and integrate reusable software components effectively.

GS9. Ethical conduct and adherence to organizational coding and quality standards.

GS10. Documentation and reporting abilities for clear record-keeping and approvals.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Developing software for embedded system	**40**	**60**	**-**	**-**
PC1. Create a software design for the embedded system as per requirement specification and get approval from superior and relevant department on the same	-	-	-	-
PC2. Access reusable components, code generation tools and unit testing tools from company's database open-source libraries and microservices architecture for modularity.	-	-	-	-
PC3. Create software modules to meet the requirements of software adhering to Real-Time Operating System (RTOS) standards and ensuring compatibility with IoT-enabled devices.	-	-	-	-
PC4. Create Unit Test Cases (UTCs) as per the specifications and requirements	-	-	-	-
PC5. Review the code and UTCs with the support team and lead engineer for any defects	-	-	-	-
PC6. Rework on the code and UTCs to fix identified defects, ensuring compliance with Continuous Integration/Continuous Deployment (CI/CD) pipelines.	-	-	-	-
PC7. Carryout testing, verification and debugging of software codes for any errors and submit the tested codes and documents for approval as per organisational standards	-	-	-	-
PC8. Support the embedded system design engineers in system testing, product verification and validation using Digital Twin Technology for real-time simulations.	-	-	-	-
NOS Total	**40**	**60**	**-**	**-**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N1509
NOS Name	Embedded Software Development with Modular Tools
Sector	Electronics
Sub-Sector	
Occupation	System Software Development-S&C
NSQF Level	5
Credits	5.5
Version	1.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025

Qualification Pack

ELE/N1510: Structured Digital Documentation with Quality and Traceability

Description

This NOS unit is about create, manage, and publish high-quality technical documentation using AI tools, ensuring compliance with standards, version control, and traceability through blockchain-based audit trails.

Scope

The scope covers the following :

- Creating Documentation
- Managing Documentation
- Compliance & Traceability

Elements and Performance Criteria

Creating Documentation

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

PC1. Document design using standard templates and approved styles.

PC2. Use AI tools like Doxygen or Confluence for documentation.

Managing Documentation

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

PC3. Ensure documentation quality and timely submission.

PC4. Publish documents in agreed formats and repositories.

Compliance & Traceability

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

PC5. Adhere to documentation standards and version control.

PC6. Integrate block chain audit trails to maintain traceability and transparency.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Principles of technical documentation, including structure, templates, and style guides.

KU2. Use of AI-based documentation tools such as Doxygen, Confluence, or similar platforms.

KU3. Document lifecycle management, including drafting, reviewing, publishing, and archiving.

KU4. File formats, naming conventions, and documentation repositories (e.g., SharePoint, Git).

KU5. Documentation quality standards, including clarity, accuracy, consistency, and completeness.

KU6. Version control systems and practices (e.g., Git, SVN) in managing documentation updates.

KU7. Compliance requirements in technical documentation for audits and certifications.

KU8. Blockchain fundamentals and how audit trails can ensure transparency and traceability.

KU9. Best practices for collaboration and approval workflows in documentation processes.

KU10. Techniques for integrating documentation into software development and engineering projects.

Generic Skills (GS)

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

GS1. Written communication skills to create clear, concise, and accurate technical content.

GS2. Attention to detail for ensuring documentation quality and consistency.

GS3. Time management to meet submission deadlines and publishing schedules.

GS4. Digital literacy in using AI documentation tools and content management systems.

GS5. Critical thinking to determine the relevance and accuracy of information included.

GS6. Collaboration skills to work effectively with engineers, developers, and project teams.

GS7. Organizational skills for managing multiple documents, versions, and repositories.

GS8. Problem-solving to resolve inconsistencies, errors, or gaps in documentation.

GS9. Ethical responsibility to maintain data integrity and adhere to compliance requirements.

GS10. Innovation mindset for adopting emerging tools and technologies like blockchain in documentation.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Creating Documentation	**15**	**20**	**-**	**-**
PC1. Document design using standard templates and approved styles.	-	-	-	-
PC2. Use AI tools like Doxygen or Confluence for documentation.	-	-	-	-
Managing Documentation	**15**	**20**	**-**	**-**
PC3. Ensure documentation quality and timely submission.	-	-	-	-
PC4. Publish documents in agreed formats and repositories.	-	-	-	-
Compliance & Traceability	**10**	**20**	**-**	**-**
PC5. Adhere to documentation standards and version control.	-	-	-	-
PC6. Integrate block chain audit trails to maintain traceability and transparency.	-	-	-	-
NOS Total	**40**	**60**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	ELE/N1510
NOS Name	Structured Digital Documentation with Quality and Traceability
Sector	Electronics
Sub-Sector	
Occupation	System Software Development-S&C
NSQF Level	5
Credits	5.5
Version	1.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025

Qualification Pack

DGT/VSQ/N0102: Employability Skills (60 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

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

PC1. identify employability skills required for jobs in various industries

PC2. identify and explore learning and employability portals

Constitutional values – Citizenship

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

PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.

PC4. follow environmentally sustainable practices

Becoming a Professional in the 21st Century

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

PC5. recognize the significance of 21st Century Skills for employment

PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

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

PC7. use basic English for everyday conversation in different contexts, in person and over the telephone

PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English

PC9. write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

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

PC10. understand the difference between job and career

PC11. prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

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

PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings

PC13. work collaboratively with others in a team

Diversity & Inclusion

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

PC14. communicate and behave appropriately with all genders and PwD

PC15. escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

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

PC16. select financial institutions, products and services as per requirement

PC17. carry out offline and online financial transactions, safely and securely

PC18. identify common components of salary and compute income, expenses, taxes, investments etc

PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

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

PC20. operate digital devices and carry out basic internet operations securely and safely

PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively

PC22. use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

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

PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research

PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion

PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

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

PC26. identify different types of customers

PC27. identify and respond to customer requests and needs in a professional manner.

PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

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

GS1. read and write different types of documents/instructions/correspondence

GS2. communicate effectively using appropriate language in formal and informal settings

GS3. behave politely and appropriately with all
GS4. how to work in a virtual mode
GS5. perform calculations efficiently
GS6. solve problems effectively
GS7. pay attention to details
GS8. manage time efficiently
GS9. maintain hygiene and sanitization to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	**1**	**1**	**-**	**-**
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
Constitutional values – Citizenship	**1**	**1**	**-**	**-**
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	**2**	**4**	**-**	**-**
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
Basic English Skills	**2**	**3**	**-**	**-**
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
Career Development & Goal Setting	**1**	**2**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
Communication Skills	**2**	**2**	**-**	**-**
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
Diversity & Inclusion	**1**	**2**	**-**	**-**
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
Financial and Legal Literacy	**2**	**3**	**-**	**-**
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
Essential Digital Skills	**3**	**4**	**-**	**-**
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Entrepreneurship	**2**	**3**	**-**	**-**
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
Customer Service	**1**	**2**	**-**	**-**
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	**2**	**3**	**-**	**-**
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	**20**	**30**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	08/05/2025
Next Review Date	31/10/2025
NSQC Clearance Date	08/05/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.

2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.

3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.

4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below).

5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on this criterion.

6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

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/N1508.Understanding Project Needs Analysis and System Design using Agile and MBSE	40	60	-	-	100	30
ELE/N1509.Embedded Software Development with Modular Tools	40	60	-	-	100	30
ELE/N1510.Structured Digital Documentation with Quality and Traceability	40	60	-	-	100	30
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	10
Total	**140**	**210**	**-**	**-**	**350**	**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.