Qualification Pack

BIM Designer - Interior Design and VR Integration

QP Code: CON/Q2101

Version: 1.0

NSQF Level: 6

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Qualification Pack

Contents

CON/Q2101: BIM Designer - Interior Design and VR Integration

Brief Job Description

A BIM Designer - Interior Design and VR Integration is responsible for developing, maintaining and overseeing the BIM drafting standards and families concerning interior design and Virtual Reality (VR). The individual supports the Building Information Modelling (BIM) design team. The person works under the supervision of the BIM Coordinator, coordinating with different personnel for the delivery of BIM models as per the client's requirements.

Personal Attributes

The individual should be detail-oriented with the ability to multi-task and solve problems. The person should also have good verbal and written communication skills.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. CON/N2110: Carry out interior designing using BIM tools

2. CON/N2111: Perform integration of VR with BIM

3. CON/N2112: Assist in coordinating BIM designing

4. CON/N9003: Manage health and safety at the workplace

5. DGT/VSQ/N0103: Employability Skills (90 Hours)

Qualification Pack (QP) Parameters

Sector	Construction
Sub-Sector	
Occupation	Building Information Modeling
Country	India
NSQF Level	6
Credits	21
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2142.9900

Minimum Educational Qualification & Experience	Pursuing first year of 2-year PG program after completing 3 year UG degree OR Completed 4 year UG program (with honours/ honours with research) OR Completed 3 year UG degree with 1 Year of experience in the relevant field OR Completed 2nd year diploma after 12th with 2 Years of experience in the relevant field OR Previous relevant Qualification of NSQF Level (5.5 with (1.5-year of experience in the relevant field)) OR Previous relevant Qualification of NSQF Level (5) with 3 Years of experience in the relevant field
Minimum Level of Education for Training in School	Not Applicable
Pre-Requisite License or Training	NA
Minimum Job Entry Age	21 Years
Last Reviewed On	NA
Next Review Date	31/08/2026
Deactivation Date	02/01/2025
NSQC Approval Date	31/08/2023
Version	1.0
Reference code on NQR	QG-06-CO-00779-2023-V1-CSDCI
NQR Version	1

CON/N2110: Carry out interior designing using BIM tools

Description

This OS unit is about designing the building interior using the relevant BIM software tools.

Scope

The scope covers the following :

- Design the building's interiors
- Carry out relevant documentation

Elements and Performance Criteria

Design the building's interiors

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

PC1. use the appropriate BIM software to visualize the interior design of the building, including lighting, materials, finishing and fixtures

PC2. generate rendered views with the required lighting conditions and finish/material representations directly from the BIM

PC3. use the appropriate tools in the BIM software for interiors, e.g. tools for shaded views with vectorial shadows, capped section boxes and silhouette edges

PC4. generate photorealistic renderings using raytracing or high-end radiosity techniques

PC5. use libraries of real-world materials, e.g. hardwood flooring, to create detailed representations and renderings

PC6. create a master schedule to pre-define interior spaces in the building

PC7. carry out appropriate detailing for the building's interiors

PC8. check the interior design model against the design requirements

PC9. calculate the interior area, quantify materials and produce estimates for the relevant interior designing materials, e.g. carpet, wall coverings, ceiling tile, or finishes, using the BIM software

PC10. ensure the client's requirements are met in interior designing

Carry out relevant documentation

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

PC11. carry out interior design-related documentation, including schedules, material takeoffs and other informational views of the building, presenting direct presentations of the underlying building model

PC12. ensure the availability of the documentation to the relevant stakeholders for their review

PC13. determine the need of making changes to the interior design based on the stakeholders' feedback and make appropriate changes, following the organizational protocols

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the use of appropriate BIM software to visualize the interior design of the building

KU2. how to generate rendered views with the required lighting conditions and finish/material representations directly from the BIM

KU3. the use of appropriate tools in the BIM software for interiors, e.g. tools for shaded views with vectorial shadows, capped section boxes and silhouette edges

KU4. how to generate photorealistic renderings using raytracing or high-end radiosity techniques

KU5. the use of libraries of real-world materials, e.g. hardwood flooring, to create detailed representations and renderings

KU6. the importance and process of creating a master schedule to pre-define interior spaces in the building

KU7. the process of detailing a building's interiors

KU8. the importance and process of checking the interior design model against the design requirements

KU9. how to calculate the interior area, quantify materials and produce estimates for the relevant interior designing materials

Generic Skills (GS)

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

GS1. maintain work-related notes and records

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

GS3. listen attentively to understand the information/ instructions being shared by the speaker

GS4. communicate clearly and politely with co-workers and clients

GS5. coordinate with co-workers to achieve work objectives

GS6. plan and prioritize tasks to ensure timely completion

GS7. identify possible disruptions to work and take appropriate preventive measures

GS8. take quick decisions to deal with workplace emergencies/ accidents

GS9. 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
Design the building's interiors	**20**	**40**	**-**	**5**
PC1. use the appropriate BIM software to visualize the interior design of the building, including lighting, materials, finishing and fixtures	-	-	-	-
PC2. generate rendered views with the required lighting conditions and finish/material representations directly from the BIM	-	-	-	-
PC3. use the appropriate tools in the BIM software for interiors, e.g. tools for shaded views with vectorial shadows, capped section boxes and silhouette edges	-	-	-	-
PC4. generate photorealistic renderings using raytracing or high-end radiosity techniques	-	-	-	-
PC5. use libraries of real-world materials, e.g. hardwood flooring, to create detailed representations and renderings	-	-	-	-
PC6. create a master schedule to pre-define interior spaces in the building	-	-	-	-
PC7. carry out appropriate detailing for the building's interiors	-	-	-	-
PC8. check the interior design model against the design requirements	-	-	-	-
PC9. calculate the interior area, quantify materials and produce estimates for the relevant interior designing materials, e.g. carpet, wall coverings, ceiling tile, or finishes, using the BIM software	-	-	-	-
PC10. ensure the client's requirements are met in interior designing	-	-	-	-
Carry out relevant documentation	**10**	**20**	**-**	**5**
PC11. carry out interior design-related documentation, including schedules, material takeoffs and other informational views of the building, presenting direct presentations of the underlying building model	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. ensure the availability of the documentation to the relevant stakeholders for their review	-	-	-	-
PC13. determine the need of making changes to the interior design based on the stakeholders' feedback and make appropriate changes, following the organizational protocols	-	-	-	-
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	CON/N2110
NOS Name	Carry out interior designing using BIM tools
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Building Information Modeling
NSQF Level	6
Credits	7
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023

CON/N2111: Perform integration of VR with BIM

Description

This OS unit is about integrating VR with BIM for enhanced BIM designing.

Scope

The scope covers the following :

- Prepare for using VR
- Use VR with BIM

Elements and Performance Criteria

Prepare for using VR

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

PC1. ensure the availability of appropriate VR software tools and devices for the integration of VR with BIM

PC2. set up the VR software tools and devices for use as per the manufacturer's instructions

Use VR with BIM

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

PC3. use the selected VR software tools and devices as per the manufacturers' instructions

PC4. create virtual representations of construction projects with the help of VR

PC5. create immersive and realistic visualizations of BIM models

PC6. use VR for pre-construction planning, e.g. checking site conditions or designing layouts

PC7. analyze the virtual BIM models using VR technology to identify errors and potential problems

PC8. utilize VR in resolving the conflicts identified in the BIM model

PC9. build BIM projects in multi-user VR environments with real-time rendering

PC10. optimize costs and schedules for BIM projects by using VR and BIM in combination

PC11. assist in using VR to train BIM Modelers on safety and equipment training

PC12. perform design review through coordination with the relevant stakeholders

PC13. perform minor troubleshooting for the VR device and coordinate with the manufacturer for the complex issues

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the benefit of integrating VR with BIM, e.g. accuracy of BIM designs, reduction in project costs, enhanced efficiency and collaboration, etc.

KU2. the use of relevant software tools and devices for the implementation of VR in BIM designing

KU3. use of Virtual reality to promote engagement with on-site personnel and stakeholders

KU4. how to use VR to explain complex construction projects to clients with a detailed view

KU5. how to create virtual models for BIM projects using VR technology

KU6. the common problems encountered during the adoption of VR and how to resolve them

Generic Skills (GS)

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

GS1. maintain work-related notes and records

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

GS3. communicate clearly and politely with co-workers and clients

GS4. listen attentively to understand the information/ instructions being shared by the speaker

GS5. plan and prioritize tasks to ensure timely completion

GS6. coordinate with co-workers to achieve work objectives

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

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare for using VR	**10**	**20**	**-**	**5**
PC1. ensure the availability of appropriate VR software tools and devices for the integration of VR with BIM	-	-	-	-
PC2. set up the VR software tools and devices for use as per the manufacturer's instructions	-	-	-	-
Use VR with BIM	**20**	**40**	**-**	**5**
PC3. use the selected VR software tools and devices as per the manufacturers' instructions	-	-	-	-
PC4. create virtual representations of construction projects with the help of VR	-	-	-	-
PC5. create immersive and realistic visualizations of BIM models	-	-	-	-
PC6. use VR for pre-construction planning, e.g. checking site conditions or designing layouts	-	-	-	-
PC7. analyze the virtual BIM models using VR technology to identify errors and potential problems	-	-	-	-
PC8. utilize VR in resolving the conflicts identified in the BIM model	-	-	-	-
PC9. build BIM projects in multi-user VR environments with real-time rendering	-	-	-	-
PC10. optimize costs and schedules for BIM projects by using VR and BIM in combination	-	-	-	-
PC11. assist in using VR to train BIM Modelers on safety and equipment training	-	-	-	-
PC12. perform design review through coordination with the relevant stakeholders	-	-	-	-
PC13. perform minor troubleshooting for the VR device and coordinate with the manufacturer for the complex issues	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	CON/N2111
NOS Name	Perform integration of VR with BIM
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Building Information Modeling
NSQF Level	6
Credits	4
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023

CON/N2112: Assist in coordinating BIM designing

Description

This OS unit is about assisting the BIM project management team in coordinating BIM designing activities.

Scope

The scope covers the following :

- Assist in BIM software adoption
- Assist in BIM modeling

Elements and Performance Criteria

Assist in BIM software adoption

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

PC1. Conduct research concerning new software development and coordinate with the operations team for their implementation

PC2. assist the BIM coordinator in BIM software integration and coordinate the resolution of related issues

PC3. generate the technology evaluations for the adoption of appropriate BIM software

PC4. develop the software testing process

PC5. conduct the appropriate test to assess the capabilities of relevant BIM software and make appropriate recommendations to the management

PC6. maintain the "Release of Liability" forms taken from architects when collaborating with them on the BIM project

PC7. check and ensure valid BIM software licensing through coordination with the BIM Coordinator

PC8. assist the BIM Coordinator in budgeting for IT assets, such as computer hardware and BIM software

PC9. assist in maintaining efficiency by planning and implementing new systems and techniques

Assist in BIM modeling

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

PC10. maintain the BIM software document archives, standard details and families, and retrieve them for projects as required

PC11. maintain the BIM software inventory and share data with the relevant stakeholders

PC12. utilize software capabilities and follow the applicable best practices for BIM implementation during all the phases BIM project lifecycle, i.e. from pre-design planning to construction

PC13. check the work of the design team and provide drafting support as required

PC14. assist the BIM Coordinator in conducting the appropriate audits of the project BIM model to ensure adherence to the applicable Quality Assurance (QA)/ Quality Control (QC) checklists

PC15. check and ensure compliance with the applicable BIM drafting standards and families

PC16. coordinate with the client to ensure the accuracy and constructability of the different modeled systems

PC17. collaborate across all discipline-specific designers and BIM modelers

PC18. ensure all the BIM model content is compatible and BIM data is available to the relevant stakeholders

PC19. follow the organizational procedures for retention, protection, retrieval, transfer, and disposal of design data

PC20. maintain clear communication with designers and modelers, providing them direction concerning BIM designing

PC21. collaborate with the design team and other departments to reach the production goals

PC22. complete the operational requirements concerning BIM modeling, following up on work results

PC23. support the BIM project teams in implementing the BIM Execution Plan, coordinating the planning the designing of the BIM model as per the client's requirements

PC24. prepare and submit the weekly report on the BIM model progress

PC25. submit a report on clash detection to the BIM Coordinator to monitor the coordination of the model

PC26. assist the Engineer and BIM Coordinator in resolving the identified clashes

PC27. ensure the BIM model aligns with the standards and goals set in BIM Execution Plan and BIM project workflow criteria

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the benefit of using BIM for managing construction projects, e.g. real-time insights into project progress and cost

KU2. the architectural, structural, installation systems modelling, etc.

KU3. the building systems, specifications and construction methods

KU4. BIM designing processes and standards

KU5. the digital workflows in BIM designing

KU6. the use of relevant BIM Authoring software

KU7. different stages of a BIM designing project lifecycle

KU8. the process of modelling objects through specific applications

KU9. how to analyze the contents of information specifications and information management plans

KU10. how to develop BIM models and conduct their pre-testing

KU11. how to validate model objects information for consistency

KU12. the use of relevant software in the BIM supply chain

KU13. the appropriate software required for BIM designing

KU14. BIM project management and relevant BIM coordination activities

KU15. the process of document management

KU16. how to import and export metadata from models into lifecycle management tools

KU17. lifecycle management of BIM models

KU18. the relevant industry standards and codes

KU19. the use of clash detection tools

KU20. content verification and creation in 3D tools

KU21. process of creating 2D and 3D design models

KU22. use of the technical and operative documentation for the production of the composition and models

KU23. the design process and principles for the production of precision technical documents, drawings and models

KU24. the common training requirements of BIM modelers

KU25. the applicable safety working practices

Generic Skills (GS)

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

GS1. maintain work-related notes and records

GS2. listen attentively to understand the information/ instructions being shared by the speaker

GS3. read the relevant literature to learn about the latest developments in the field of work

GS4. communicate clearly and politely with co-workers and clients

GS5. coordinate with co-workers to achieve work objectives

GS6. plan and prioritize tasks to ensure timely completion

GS7. identify possible disruptions to work and take appropriate preventive measures

GS8. take quick decisions to deal with workplace emergencies/ accidents

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Assist in BIM software adoption	**12**	**20**	**-**	**5**
PC1. Conduct research concerning new software development and coordinate with the operations team for their implementation	-	-	-	-
PC2. assist the BIM coordinator in BIM software integration and coordinate the resolution of related issues	-	-	-	-
PC3. generate the technology evaluations for the adoption of appropriate BIM software	-	-	-	-
PC4. develop the software testing process	-	-	-	-
PC5. conduct the appropriate test to assess the capabilities of relevant BIM software and make appropriate recommendations to the management	-	-	-	-
PC6. maintain the "Release of Liability" forms taken from architects when collaborating with them on the BIM project	-	-	-	-
PC7. check and ensure valid BIM software licensing through coordination with the BIM Coordinator	-	-	-	-
PC8. assist the BIM Coordinator in budgeting for IT assets, such as computer hardware and BIM software	-	-	-	-
PC9. assist in maintaining efficiency by planning and implementing new systems and techniques	-	-	-	-
Assist in BIM modeling	**18**	**40**	**-**	**5**
PC10. maintain the BIM software document archives, standard details and families, and retrieve them for projects as required	-	-	-	-
PC11. maintain the BIM software inventory and share data with the relevant stakeholders	-	-	-	-
PC12. utilize software capabilities and follow the applicable best practices for BIM implementation during all the phases BIM project lifecycle, i.e. from pre-design planning to construction	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. check the work of the design team and provide drafting support as required	-	-	-	-
PC14. assist the BIM Coordinator in conducting the appropriate audits of the project BIM model to ensure adherence to the applicable Quality Assurance (QA)/ Quality Control (QC) checklists	-	-	-	-
PC15. check and ensure compliance with the applicable BIM drafting standards and families	-	-	-	-
PC16. coordinate with the client to ensure the accuracy and constructability of the different modeled systems	-	-	-	-
PC17. collaborate across all discipline-specific designers and BIM modelers	-	-	-	-
PC18. ensure all the BIM model content is compatible and BIM data is available to the relevant stakeholders	-	-	-	-
PC19. follow the organizational procedures for retention, protection, retrieval, transfer, and disposal of design data	-	-	-	-
PC20. maintain clear communication with designers and modelers, providing them direction concerning BIM designing	-	-	-	-
PC21. collaborate with the design team and other departments to reach the production goals	-	-	-	-
PC22. complete the operational requirements concerning BIM modeling, following up on work results	-	-	-	-
PC23. support the BIM project teams in implementing the BIM Execution Plan, coordinating the planning the designing of the BIM model as per the client's requirements	-	-	-	-
PC24. prepare and submit the weekly report on the BIM model progress	-	-	-	-
PC25. submit a report on clash detection to the BIM Coordinator to monitor the coordination of the model	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. assist the Engineer and BIM Coordinator in resolving the identified clashes	-	-	-	-
PC27. ensure the BIM model aligns with the standards and goals set in BIM Execution Plan and BIM project workflow criteria	-	-	-	-
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	CON/N2112
NOS Name	Assist in coordinating BIM designing
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Building Information Modeling
NSQF Level	6
Credits	6
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023

CON/N9003: Manage health and safety at the workplace

Description

This occupational standards unit is about ensuring health and safety at work. This includes personal health and safety and that of the subordinates, as applicable.

Scope

The scope covers the following :

- Ensure health and safety at work
- Manage workplace emergencies

Elements and Performance Criteria

Ensure health and safety at work

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

PC1. check and ensure the availability of appropriate and usable Personal Protective Equipment (PPE) at the workplace

PC2. use the appropriate PPE according to the nature of work and ensure other personnel also do the same

PC3. create awareness regarding health and safety practices at work

PC4. follow and promote the appropriate measures to ensure hygiene in the workplace, e.g. regular cleaning and sanitization

PC5. coordinate regular workplace audits to ensure safe working conditions

PC6. identify health and safety hazards at the workplace and take appropriate preventive measures

PC7. report any out-of-authority health and safety issues to the relevant authority for a timely resolution

PC8. identify the instances of non-compliance with the health and safety policies and take appropriate measures, e.g. giving feedback to the relevant personnel

Manage workplace emergencies

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

PC9. ensure the availability of the updated first aid kit at the workplace

PC10. ensure prompt and timely medical attention for any injured/ unwell personnel

PC11. arrange for effective training of personnel on emergency procedures

PC12. manage workplace emergencies, such as fire, accidents, disease outbreaks or natural calamities following the organizational policies

PC13. follow the applicable emergency procedures and ensure the personnel also do the same

PC14. ensure the safe use of emergency equipment, e.g. fire extinguishers, according to the manufacturer's instructions

PC15. arrange for the emergency equipment to be repaired or replaced, as required

PC16. maintain records of workplace emergencies and report them to the relevant authority in compliance with the applicable regulatory requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the applicable regulations concerning workplace health and safety
KU2. various practices to ensure personal health and safety at the workplace
KU3. the importance of ensuring the use of appropriate at the workplace
KU4. the importance of ensuring that PPE, emergency equipment and first-aid kit at the workplace are up to date and usable condition
KU5. the applicable practices for sanitizing the workplace
KU6. the process of identifying health and safety hazards at the workplace and taking appropriate preventive measures
KU7. the importance of regular workplace audits to ensure safe working conditions
KU8. the appropriate action to be taken to deal with workplace emergencies such as fire, accidents, disease outbreaks or natural calamities
KU9. the process of providing first aid and requesting further medical assistance
KU10. safe use of the emergency equipment as per the manufacturer's instructions
KU11. the process of reporting workplace emergencies/ accidents to the relevant authority in compliance with the organizational and regulatory requirements

Generic Skills (GS)

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

GS1. maintain the appropriate data and records
GS2. read the appropriate reports and literature concerning the field of work
GS3. communicate professionally with all the stakeholders
GS4. listen attentively to understand the information/ instructions being shared and take appropriate action
GS5. coordinate with co-workers to achieve the work objectives
GS6. plan and execute tasks based on priority
GS7. identify possible disruptions to work and take appropriate mitigation measures
GS8. take prompt action to deal with workplace emergencies and accidents
GS9. evaluate all possible solutions to work-related problems and select the best one
GS10. follow the recommended practices for the timely completion of work and achievement of organizational objectives

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Ensure health and safety at work	**25**	**35**	**-**	**-**
PC1. check and ensure the availability of appropriate and usable Personal Protective Equipment (PPE) at the workplace	-	-	-	-
PC2. use the appropriate PPE according to the nature of work and ensure other personnel also do the same	-	-	-	-
PC3. create awareness regarding health and safety practices at work	-	-	-	-
PC4. follow and promote the appropriate measures to ensure hygiene in the workplace, e.g. regular cleaning and sanitization	-	-	-	-
PC5. coordinate regular workplace audits to ensure safe working conditions	-	-	-	-
PC6. identify health and safety hazards at the workplace and take appropriate preventive measures	-	-	-	-
PC7. report any out-of-authority health and safety issues to the relevant authority for a timely resolution	-	-	-	-
PC8. identify the instances of non-compliance with the health and safety policies and take appropriate measures, e.g. giving feedback to the relevant personnel	-	-	-	-
Manage workplace emergencies	**15**	**25**	**-**	**-**
PC9. ensure the availability of the updated first aid kit at the workplace	-	-	-	-
PC10. ensure prompt and timely medical attention for any injured/ unwell personnel	-	-	-	-
PC11. arrange for effective training of personnel on emergency procedures	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. manage workplace emergencies, such as fire, accidents, disease outbreaks or natural calamities following the organizational policies	-	-	-	-
PC13. follow the applicable emergency procedures and ensure the personnel also do the same	-	-	-	-
PC14. ensure the safe use of emergency equipment, e.g. fire extinguishers, according to the manufacturer's instructions	-	-	-	-
PC15. arrange for the emergency equipment to be repaired or replaced, as required	-	-	-	-
PC16. maintain records of workplace emergencies and report them to the relevant authority in compliance with the applicable regulatory requirements	-	-	-	-
NOS Total	**40**	**60**	-	-

National Occupational Standards (NOS) Parameters

NOS Code	CON/N9003
NOS Name	Manage health and safety at the workplace
Sector	Construction
Sub-Sector	Generic
Occupation	Generic Safety
NSQF Level	5
Credits	1
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023

DGT/VSQ/N0103: Employability Skills (90 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. understand the significance of employability skills in meeting the current job market requirement and future of work

PC2. identify and explore learning and employability relevant portals

PC3. research about the different industries, job market trends, latest skills required and the available opportunities

Constitutional values – Citizenship

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

PC4. 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.

PC5. follow environmentally sustainable practices

Becoming a Professional in the 21st Century

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

PC6. recognize the significance of 21st Century Skills for employment

PC7. 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

PC8. adopt a continuous learning mindset for personal and professional development

Basic English Skills

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

PC9. use basic English for everyday conversation in different contexts, in person and over the telephone

PC10. read and understand routine information, notes, instructions, mails, letters etc. written in English

PC11. 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:

PC12. identify career goals based on the skills, interests, knowledge, and personal attributes

PC13. prepare a career development plan with short- and long-term goals

Communication Skills

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

PC14. follow verbal and non-verbal communication etiquette while communicating in professional and public settings

PC15. use active listening techniques for effective communication

PC16. communicate in writing using appropriate style and format based on formal or informal requirements

PC17. work collaboratively with others in a team

Diversity & Inclusion

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

PC18. communicate and behave appropriately with all genders and PwD

PC19. 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:

PC20. identify and select reliable institutions for various financial products and services such as bank account, debit and credit cards, loans, insurance etc.

PC21. carry out offline and online financial transactions, safely and securely, using various methods and check the entries in the passbook

PC22. identify common components of salary and compute income, expenses, taxes, investments etc

PC23. 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:

PC24. operate digital devices and use their features and applications securely and safely

PC25. carry out basic internet operations by connecting to the internet safely and securely, using the mobile data or other available networks through Bluetooth, Wi-Fi, etc.

PC26. display responsible online behaviour while using various social media platforms

PC27. create a personal email account, send and process received messages as per requirement

PC28. carry out basic procedures in documents, spreadsheets and presentations using respective and appropriate applications

PC29. utilize virtual collaboration tools to work effectively

Entrepreneurship

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

PC30. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research

PC31. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion

PC32. 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:

PC33. identify different types of customers and ways to communicate with them

PC34. identify and respond to customer requests and needs in a professional manner

PC35. use appropriate tools to collect customer feedback

PC36. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC37. create a professional Curriculum vitae (Résumé)

PC38. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC39. apply to identified job openings using offline /online methods as per requirement

PC40. answer questions politely, with clarity and confidence, during recruitment and selection

PC41. 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. components of salary and 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

KU16. use applications such as word processors, spreadsheets etc.

KU17. how to identify business opportunities

KU18. types and needs of customers

KU19. how to apply for a job and prepare for an interview

KU20. 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 in English and other languages

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

GS3. behave politely and appropriately with all to maintain effective work relationship

GS4. how to work in a virtual mode, using various technological platforms

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. understand the significance of employability skills in meeting the current job market requirement and future of work	-	-	-	-
PC2. identify and explore learning and employability relevant portals	-	-	-	-
PC3. research about the different industries, job market trends, latest skills required and the available opportunities	-	-	-	-
Constitutional values – Citizenship	**1**	**1**	**-**	**-**
PC4. 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.	-	-	-	-
PC5. follow environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	**1**	**3**	**-**	**-**
PC6. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC7. 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	-	-	-	-
PC8. adopt a continuous learning mindset for personal and professional development	-	-	-	-
Basic English Skills	**3**	**4**	**-**	**-**
PC9. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC11. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
Career Development & Goal Setting	**1**	**2**	**-**	**-**
PC12. identify career goals based on the skills, interests, knowledge, and personal attributes	-	-	-	-
PC13. prepare a career development plan with short- and long-term goals	-	-	-	-
Communication Skills	**2**	**2**	**-**	**-**
PC14. follow verbal and non-verbal communication etiquette while communicating in professional and public settings	-	-	-	-
PC15. use active listening techniques for effective communication	-	-	-	-
PC16. communicate in writing using appropriate style and format based on formal or informal requirements	-	-	-	-
PC17. work collaboratively with others in a team	-	-	-	-
Diversity & Inclusion	**1**	**1**	**-**	**-**
PC18. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC19. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
Financial and Legal Literacy	**2**	**3**	**-**	**-**
PC20. identify and select reliable institutions for various financial products and services such as bank account, debit and credit cards, loans, insurance etc.	-	-	-	-
PC21. carry out offline and online financial transactions, safely and securely, using various methods and check the entries in the passbook	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC22. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC23. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
Essential Digital Skills	**3**	**5**	**-**	**-**
PC24. operate digital devices and use their features and applications securely and safely	-	-	-	-
PC25. carry out basic internet operations by connecting to the internet safely and securely, using the mobile data or other available networks through Bluetooth, Wi-Fi, etc.	-	-	-	-
PC26. display responsible online behaviour while using various social media platforms	-	-	-	-
PC27. create a personal email account, send and process received messages as per requirement	-	-	-	-
PC28. carry out basic procedures in documents, spreadsheets and presentations using respective and appropriate applications	-	-	-	-
PC29. utilize virtual collaboration tools to work effectively	-	-	-	-
Entrepreneurship	**2**	**3**	**-**	**-**
PC30. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC31. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC32. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
Customer Service	**1**	**2**	**-**	**-**
PC33. identify different types of customers and ways to communicate with them	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC34. identify and respond to customer requests and needs in a professional manner	-	-	-	-
PC35. use appropriate tools to collect customer feedback	-	-	-	-
PC36. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	**2**	**3**	**-**	**-**
PC37. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC38. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC39. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC40. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC41. 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/N0103
NOS Name	Employability Skills (90 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	5
Credits	3
Version	1.0
Last Reviewed Date	08/05/2025
Next Review Date	08/05/2028
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)/ Elements 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/ Elements.

2. The assessment for the knowledge part will be based on knowledge bank of questions created by Assessment Bodies subject to approval by SSC

3. Individual assessment agencies will create unique question papers for knowledge/theory part for assessment of candidates as per assessment criteria given below

4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on assessment criteria.

5. The passing percentage for each QP will be 70%. To pass the Qualification Pack, every trainee should score a minimum of 70% individually in each NOS.

6. The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome.

7. The trainee shall be provided with a chance to repeat the test to correct his procedures in case of improper performance, with a deduction of marks for each iteration.

8. After the certain number of iterations as decided by SSC the trainee is marked as fail, scoring zero marks for the procedure for the practical activity.

9. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack within the specified time frame set by SSC.

10. Minimum duration of Assessment of each QP shall be of 4hrs/trainee.

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
CON/N2110.Carry out interior designing using BIM tools	30	60	0	10	100	25
CON/N2111.Perform integration of VR with BIM	30	60	0	10	100	25
CON/N2112.Assist in coordinating BIM designing	30	60	0	10	100	30
CON/N9003.Manage health and safety at the workplace	40	60	0	0	100	10
DGT/VSQ/N0103.Employability Skills (90 Hours)	20	30	-	-	50	10
Total	**150**	**270**	**0**	**30**	**450**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
BIM	Building Information Modelling
VR	Virtual Reality
QA	Quality Assurance
QC	Quality Control
BEP	BIM Execution Plan
PPE	Personal Protective Equipment
EHS	Environment Health and Safety

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.