Qualification Pack

5D BIM Planner - Cost Planning and Monitoring

QP Code: CON/Q2107

Version: 1.0

NSQF Level: 6

Contents

CON/Q2107: 5D BIM Planner - Cost Planning and Monitoring

Brief Job Description

A 5D BIM Planner - Cost Planning and Monitoring is responsible for cost management for the entire lifecycle of Building Information Modeling (BIM) projects. The individual generates cost and material estimates for building construction by using the appropriate 5D BIM software. The person works in coordination with engineers, architects, contractors and builders.

Personal Attributes

The individual should have attention to detail with organizational and problem-solving skills. The person should be able to communicate well verbally and in writing.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. CON/N2103: Perform 5D project planning

2. CON/N2105: Perform construction simulation and cost management for 5D projects

3. CON/N2122: Perform 5 D progress tracking and reporting

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 (in case of 4-year UG 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 Years of experience in the relevant field) OR Previous relevant Qualification of NSQF Level (5.0) with 3 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	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-00786-2023-V1-CSDCI
NQR Version	1

CON/N2103: Perform 5D project planning

Description

This OS unit is about performing planning for 5D construction projects.

Scope

The scope covers the following :

- Plan 5D projects
- Carry out relevant documentation

Elements and Performance Criteria

Plan 5D projects

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

PC1. analyze the relevant drawings and determine the BIM construction requirements and coordinate with the BIM Coordinator to get further clarification, as required

PC2. carry out the required pre-planning concerning the scope of the quantities to be quantified

PC3. carry out 5D cost loaded scheduling using the smart automated scheduling feature in the BIM Management software

PC4. determine the productivity rates and perform resource planning

PC5. follow the critical path analysis project-management technique to identify all the activities required to be completed in the 5D project

PC6. import or export from the relevant sources, e.g. project management software used by the organization

PC7. check and ensure quantities are quantified correctly

PC8. extract the quantities from the BIM model

PC9. model all the structure and architectural elements using the appropriate BIM software, ensuring the BIM model has the correct details

PC10. separate the structural elements, e.g. beam, columns, slabs and import them for quantity extraction

PC11. generate the complete Bill of Quantities (BOQ) and cost estimations as per the requirement during the lifecycle of construction projects

PC12. ensure the correct description for BOQ

PC13. connect the BOQ with the modeling software to enable auto-updates in the model BOQ quantities according to the changes during the project lifecycle

PC14. connect estimated cost with the model element

Carry out relevant documentation

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

PC15. carry out appropriate documentation concerning the 5D project planning, ensuring the relevant stakeholders can access the documents

PC16. ensure the accuracy of documents by conducting a thorough review

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the importance and practice of quantity surveying in the construction industry

KU2. the benefits of using 5D BIM solutions in comparison to traditional cost panning methods, e.g. minimizing human error

KU3. the appropriate software required for generating 4D/5D integrated cost loaded scheduling

KU4. risk visualization with 5D BIM Modeling to improve design decisions

KU5. financial risk assessment and price model generation

KU6. fiveD project planning process, i.e. mapping of model elements to cost items, element based cost analysis, budgeting and preparation of bill of quantities, 5D scheduling, productivity rates and resource planning, using the BIM management software

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
Plan 5D projects	**26**	**52**	**-**	**8**
PC1. analyze the relevant drawings and determine the BIM construction requirements and coordinate with the BIM Coordinator to get further clarification, as required	-	-	-	-
PC2. carry out the required pre-planning concerning the scope of the quantities to be quantified	-	-	-	-
PC3. carry out 5D cost loaded scheduling using the smart automated scheduling feature in the BIM Management software	-	-	-	-
PC4. determine the productivity rates and perform resource planning	-	-	-	-
PC5. follow the critical path analysis project-management technique to identify all the activities required to be completed in the 5D project	-	-	-	-
PC6. import or export from the relevant sources, e.g. project management software used by the organization	-	-	-	-
PC7. check and ensure quantities are quantified correctly	-	-	-	-
PC8. extract the quantities from the BIM model	-	-	-	-
PC9. model all the structure and architectural elements using the appropriate BIM software, ensuring the BIM model has the correct details	-	-	-	-
PC10. separate the structural elements, e.g. beam, columns, slabs and import them for quantity extraction	-	-	-	-
PC11. generate the complete Bill of Quantities (BOQ) and cost estimations as per the requirement during the lifecycle of construction projects	-	-	-	-
PC12. ensure the correct description for BOQ	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. connect the BOQ with the modeling software to enable auto-updates in the model BOQ quantities according to the changes during the project lifecycle	-	-	-	-
PC14. connect estimated cost with the model element	-	-	-	-
Carry out relevant documentation	**4**	**8**	**-**	**2**
PC15. carry out appropriate documentation concerning the 5D project planning, ensuring the relevant stakeholders can access the documents	-	-	-	-
PC16. ensure the accuracy of documents by conducting a thorough review	-	-	-	-
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	CON/N2103
NOS Name	Perform 5D project planning
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/N2105: Perform construction simulation and cost management for 5D projects

Description

This OS unit is about performing construction simulation and cost management for 5D projects.

Scope

The scope covers the following :

- Perform 5D construction simulation
- Perform cost management for 5D project

Elements and Performance Criteria

Perform 5D construction simulation

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

PC1. create and export 5D simulations using the appropriate software

PC2. compare 5D simulations to evaluate different time and cost scenarios and forecast cash flow

PC3. identify and correct errors in 5D simulations to avoid changes in the construction phase

PC4. use the appropriate methods for the identification of elements, tasks and resources, such as custom colour schemes

PC5. perform the resource look-ahead analysis

PC6. conduct stamp cost analysis on model element

Perform cost management for 5D project

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

PC7. perform cash flow analysis, advanced analysis and cost optimization

PC8. carry out resource allocation and leveling for effective resource management

PC9. map the model elements to the cost items

PC10. perform element-based cost analysis

PC11. carry out budgeting and prepare the Bill of Quantities (BOQ)

PC12. determine the rate for material, labour and plant, and link the rate to the BOQ in the software

PC13. maintain the price library in the costing software

PC14. perform integration of custom cost database (i.e. Uniformat, Masterformat, Uniclass, DIN 276...)

PC15. prepare the company cost databases (using centralized cost DB)

PC16. carry out smart automated 5D scheduling

PC17. determine the productivity rates and perform resource planning

PC18. conduct critical path method and analysis

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the process of automated BOQ extraction

KU2. the appropriate software required for understanding integrated 4D/5D BIM workflows

KU3. how to develop a budget and link to costs with the BIM model

KU4. the use of 5D modeling to improve collaboration among project stakeholders

KU5. conceptual modeling and cost planning with the use of 5D software solutions to generate cost and material estimates

KU6. BOQ/quantity take-off, cost estimation, tendering, and BIM scheduling and simulation

KU7. Five D cost management activities, i.e. cost estimation, creation of cost database, cost data mapping, creation of detailed budgets, cost and resource database, integration of custom cost database, etc.

KU8. cost optimization - advanced analysis and optimization, cash flow analysis, and resource management, allocation and leveling

KU9. the 5D construction simulation

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
Perform 5D construction simulation	**15**	**30**	**-**	**5**
PC1. create and export 5D simulations using the appropriate software	-	-	-	-
PC2. compare 5D simulations to evaluate different time and cost scenarios and forecast cash flow	-	-	-	-
PC3. identify and correct errors in 5D simulations to avoid changes in the construction phase	-	-	-	-
PC4. use the appropriate methods for the identification of elements, tasks and resources, such as custom colour schemes	-	-	-	-
PC5. perform the resource look-ahead analysis	-	-	-	-
PC6. conduct stamp cost analysis on model element	-	-	-	-
Perform cost management for 5D project	**15**	**30**	**-**	**5**
PC7. perform cash flow analysis, advanced analysis and cost optimization	-	-	-	-
PC8. carry out resource allocation and leveling for effective resource management	-	-	-	-
PC9. map the model elements to the cost items	-	-	-	-
PC10. perform element-based cost analysis	-	-	-	-
PC11. carry out budgeting and prepare the Bill of Quantities (BOQ)	-	-	-	-
PC12. determine the rate for material, labour and plant, and link the rate to the BOQ in the software	-	-	-	-
PC13. maintain the price library in the costing software	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. perform integration of custom cost database (i.e. Uniformat, Masterformat, Uniclass, DIN 276…)	-	-	-	-
PC15. prepare the company cost databases (using centralized cost DB)	-	-	-	-
PC16. carry out smart automated 5D scheduling	-	-	-	-
PC17. determine the productivity rates and perform resource planning	-	-	-	-
PC18. conduct critical path method and analysis	-	-	-	-
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	CON/N2105
NOS Name	Perform construction simulation and cost management for 5D projects
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/N2122: Perform 5 D progress tracking and reporting

Description

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

Scope

The scope covers the following :

- Perform 5D progress tracking
- Perform 5D reporting

Elements and Performance Criteria

Perform 5D progress tracking

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

PC1. monitor the construction progress using the 5D BIM software

PC2. perform resource monitoring to ensure their optimum utilization with increased productivity

PC3. track and measure the construction phases and their level of completion

PC4. manage the construction changes and potential/ pending change orders

PC5. track the stored materials and off-site materials

PC6. perform continuous quality control and construction quality assurance

PC7. perform real-time data acquisition to avoid delays and perform high-quality resource management

PC8. coordinate with the planning team at critical stages of the project

PC9. visualize the critical path of the project to understand the phasing schedule

PC10. identify and resolve the space and workspace conflicts ahead of the construction process

PC11. identify the project's information and spatial complexities and conduct additional analyses

PC12. identify the schedule, sequence, phasing and time-constraints issues

PC13. track and maintain the installation status of the project

PC14. conduct analysis of the impact of progress on cash flow

PC15. generate confirmed interim payment certificates of the performed works

PC16. generate confirmation of the exact amount of works performed

Perform 5D reporting

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

PC17. prepare detailed 5D task reports with cash-flow monitoring, using relevant project management software

PC18. carry out schedule comparisons, conducting planned vs actual analysis

PC19. perform earned value analysis

PC20. prepare work breakdown structure report

PC21. update the actual cost against the relevant activities

PC22. perform executive and business intelligence (BI) reporting, with the tracking of key performance indicators (KPIs)

PC23. generate change orders, and time and cost impact on the project

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 appropriate software required for understanding integrated 4D/5D BIM workflows

KU3. the architectural, structural, installation systems modelling, etc.

KU4. quantity, cost and time BIM based change order management

KU5. the building systems, specifications and construction methods

KU6. lifecycle management of BIM models

KU7. the relevant industry standards and codes

KU8. the importance and process of 5D progress tracking

KU9. the 5D reporting requirements

KU10. the use of relevant project management software

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
Perform 5D progress tracking	**20**	**40**	**-**	**8**
PC1. monitor the construction progress using the 5D BIM software	-	-	-	-
PC2. perform resource monitoring to ensure their optimum utilization with increased productivity	-	-	-	-
PC3. track and measure the construction phases and their level of completion	-	-	-	-
PC4. manage the construction changes and potential/ pending change orders	-	-	-	-
PC5. track the stored materials and off-site materials	-	-	-	-
PC6. perform continuous quality control and construction quality assurance	-	-	-	-
PC7. perform real-time data acquisition to avoid delays and perform high-quality resource management	-	-	-	-
PC8. coordinate with the planning team at critical stages of the project	-	-	-	-
PC9. visualize the critical path of the project to understand the phasing schedule	-	-	-	-
PC10. identify and resolve the space and workspace conflicts ahead of the construction process	-	-	-	-
PC11. identify the project's information and spatial complexities and conduct additional analyses	-	-	-	-
PC12. identify the schedule, sequence, phasing and time-constraints issues	-	-	-	-
PC13. track and maintain the installation status of the project	-	-	-	-
PC14. conduct analysis of the impact of progress on cash flow	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. generate confirmed interim payment certificates of the performed works	-	-	-	-
PC16. generate confirmation of the exact amount of works performed	-	-	-	-
Perform 5D reporting	**10**	**20**	**-**	**2**
PC17. prepare detailed 5D task reports with cash-flow monitoring, using relevant project management software	-	-	-	-
PC18. carry out schedule comparisons, conducting planned vs actual analysis	-	-	-	-
PC19. perform earned value analysis	-	-	-	-
PC20. prepare work breakdown structure report	-	-	-	-
PC21. update the actual cost against the relevant activities	-	-	-	-
PC22. perform executive and business intelligence (BI) reporting, with the tracking of key performance indicators (KPIs)	-	-	-	-
PC23. generate change orders, and time and cost impact on the project	-	-	-	-
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	CON/N2122
NOS Name	Perform 5 D progress tracking and reporting
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/N2103.Perform 5D project planning	30	60	0	10	100	25
CON/N2105.Perform construction simulation and cost management for 5D projects	30	60	0	10	100	25
CON/N2122.Perform 5 D progress tracking and reporting	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**	**0**	**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 Modeling
BOQ	Bill of Quantities
BI	Business Intelligence
KPI	Key Performance Indicators

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.