



Qualification Pack



BIM Technician - Object Creation

QP Code: CON/Q2109

Version: 1.0

NSQF Level: 5

Construction Skill Development Council of India || CPB 103 & 104 (1st Floor), Block 4B, DLF Corporate Park, Phase III, MG Road
Gurgaon-122002 || email:standards@csdcindia.org



Qualification Pack

Contents

CON/Q2109: BIM Technician - Object Creation	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
CON/N2115: Plan and create BIM objects for BIM models	5
CON/N2116: Define the properties and names for BIM objects	12
CON/N2117: Set the BIM object behaviour and coordinate quality check	17
CON/N9003: Manage health and safety at the workplace	23
DGT/VSQ/N0102: Employability Skills (60 Hours)	28
Assessment Guidelines and Weightage	35
<i>Assessment Guidelines</i>	35
<i>Assessment Weightage</i>	36
Acronyms	37
Glossary	38



Qualification Pack

CON/Q2109: BIM Technician - Object Creation

Brief Job Description

A BIM Technician - Object Creation is responsible for the creation of Building Information Modeling (BIM) objects which are used to create BIM models for building. The individual also defines the properties and names for BIM objects, sets their behaviour and coordinates BIM object quality checks.

Personal Attributes

The individual should have attention to detail and problem-solving skills. The person should be able to work with concentration for long durations and possess good verbal and written communication skills.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [CON/N2115: Plan and create BIM objects for BIM models](#)
2. [CON/N2116: Define the properties and names for BIM objects](#)
3. [CON/N2117: Set the BIM object behaviour and coordinate quality check](#)
4. [CON/N9003: Manage health and safety at the workplace](#)
5. [DGT/VSQ/N0102: Employability Skills \(60 Hours\)](#)

Qualification Pack (QP) Parameters

Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Building Information Modeling
Country	India
NSQF Level	5
Credits	17
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2142.9900



Qualification Pack

Minimum Educational Qualification & Experience	<p>Completed 2nd year of UG (UG Diploma) ((of 3-year/ 4-years UG))</p> <p>OR</p> <p>Completed 2nd year diploma after 12th</p> <p>OR</p> <p>Pursuing 2nd year of 2-year diploma after 12th</p> <p>OR</p> <p>Completed 3 year diploma after 10th with 1 Year of experience in the relevant field</p> <p>OR</p> <p>12th grade Pass with 2 Years of experience in the relevant field</p> <p>OR</p> <p>10th grade pass with 4 Years of experience in the relevant field</p> <p>OR</p> <p>Previous relevant Qualification of NSQF Level (4 and with minimum education as 8th Grade pass) with 3 Years of experience in the relevant field</p> <p>OR</p> <p>Previous relevant Qualification of NSQF Level (4.5) with 1.5 Years of experience in the relevant field)</p>
Minimum Level of Education for Training in School	Not Applicable
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	31/08/2026
NSQC Approval Date	31/08/2023
Version	1.0
Reference code on NQR	QG-05-CO-00782-2023-V1-CSDCI
NQR Version	1



Qualification Pack

CON/N2115: Plan and create BIM objects for BIM models

Description

This OS unit is about planning and creating BIM objects for BIM modeling.

Scope

The scope covers the following :

- Plan and prepare for BIM object creation
- Create BIM objects

Elements and Performance Criteria

Plan and prepare for BIM object creation

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

- PC1.** determine the project requirements with respect to BIM object creation
- PC2.** collect the appropriate information and data for BIM object creation
- PC3.** plan the delivery of the BIM object creation project, setting out project objectives and specifications
- PC4.** select an appropriate software for the creation of BIM objects
- PC5.** set up the software for use with appropriate parameters and templates
- PC6.** ensure the software's licensing/subscription requirements are met for its use
- PC7.** identify and resolve any issues with the BIM software by coordinating with the Information Technology (IT) team or the developer's support team

Create BIM objects

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

- PC8.** create BIM objects based on the engineering design data
- PC9.** integrate the appropriate metadata in BIM objects, e.g. critical product data, including digital installation instructions, operational guidance, digital warranty and service data
- PC10.** simplify the geometry in the model, removing any proprietary design details, small and/or internal components or features
- PC11.** ensure the modeling of BIM objects for specific purposes to suit the project-specific requirements
- PC12.** deploy the BIM objects to online configurator or export them in an appropriate format
- PC13.** select an appropriate Level of Development (LOD) for the BIM object based on the client requirements, project demand, BIM platform limitations, and applicable modeling practices
- PC14.** assign BIM objects the appropriate and representative category / classification / catalog based on the BIM creation platform
- PC15.** assign the appropriate Industrial Foundation Classes (IFC) parameters to BIM objects to facilitate their exchange and the related information
- PC16.** follow the applicable geometrical requirements for the production of BIM objects, including aspects concerning shape, symbolic items, space and material



Qualification Pack

- PC17.** ensure the BIM objects have a modelled geometry at the recommended scale and ensure suitable insertion points for their intended use
- PC18.** utilize controlled visible geometry and symbolic components to draw BIM objects
- PC19.** assign suitable dimensions and appropriate geometrical parameters to BIM objects during the design and construction phases as per the applicable size and design requirements
- PC20.** follow the applicable 3D geometry conventions
- PC21.** ensure the BIM object symbolic items are consistent with the applicable practices
- PC22.** ensure the inclusion of indications for 3D space requirements in BIM objects for construction-phase and facility management-phase objects
- PC23.** detect and resolve clashes in BIM objects
- PC24.** model BIM objects with a suitable geometry, showing the appropriate size for major components of the product for a design-phase object
- PC25.** use the appropriate unit of measurement, e.g. units of millimeters and degrees, as per the applicable BIM standards and guidelines
- PC26.** ensure the BIM objects do not have unset or undefined values
- PC27.** combine BIM objects to create a BIM model of the building, with all assets linked to key data required to operate and maintain it effectively

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the benefits of using BIM in construction projects
- KU2.** the digital representation of physical and functional characteristics of a facility using BIM
- KU3.** what BIM objects or 3D representation of products are and the benefits of creating and using them
- KU4.** the metadata contained in BIM objects, e.g. dimensions, classifications, the kind of object and its classification, performance values, material type, expected lifetime, manufacturer, maintenance, BIM object behaviour, information regarding sustainability and energy efficiency, etc.
- KU5.** the appropriate software to be used for BIM object creation
- KU6.** the use of BIM objects for cost estimation and analyses
- KU7.** different types of BIM objects, e.g. layered and component BIM objects
- KU8.** the importance of having structured, reliable, accessible, and up to date data in BIM objects
- KU9.** the process of combining BIM objects to create a BIM model
- KU10.** the 3D geometry of a BIM object that describes its physical appearance, what it is, how it is classified, its performance values, material types, expected lifetime, etc.
- KU11.** the creation of layered and component BIM objects
- KU12.** the benefit of standardizing BIM objects used in BIM models
- KU13.** the representation of a BIM object's geometrical and non-geometrical characteristics through its property
- KU14.** the characteristics of a high-quality BIM object, e.g. well-defined purpose and value, appropriate geometrical and non-geometrical information, capability of generating production of drawings, etc.



Qualification Pack

- KU15.** the importance of checking and ensuring correct information in BIM objects in all aspects, e.g. geometrical and non-geometrical components
- KU16.** the use of BIM objects for direct coordination in BIM models to enable the production of drawings and schedules
- KU17.** the process of detailing BIM objects to an appropriate level
- KU18.** how to detect and resolve clashes in BIM objects

Generic Skills (GS)

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

- GS1.** communicate clearly and politely with co-workers and clients
- GS2.** coordinate with co-workers to achieve work objectives
- GS3.** maintain work-related notes and records
- GS4.** read the relevant literature to learn about the latest developments in the field of work
- GS5.** listen attentively to understand the information/ instructions being shared by the speaker
- 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



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Plan and prepare for BIM object creation</i>	10	20	-	3
PC1. determine the project requirements with respect to BIM object creation	-	-	-	-
PC2. collect the appropriate information and data for BIM object creation	-	-	-	-
PC3. plan the delivery of the BIM object creation project, setting out project objectives and specifications	-	-	-	-
PC4. select an appropriate software for the creation of BIM objects	-	-	-	-
PC5. set up the software for use with appropriate parameters and templates	-	-	-	-
PC6. ensure the software's licensing/subscription requirements are met for its use	-	-	-	-
PC7. identify and resolve any issues with the BIM software by coordinating with the Information Technology (IT) team or the developer's support team	-	-	-	-
<i>Create BIM objects</i>	20	40	-	7
PC8. create BIM objects based on the engineering design data	-	-	-	-
PC9. integrate the appropriate metadata in BIM objects, e.g. critical product data, including digital installation instructions, operational guidance, digital warranty and service data	-	-	-	-
PC10. simplify the geometry in the model, removing any proprietary design details, small and/or internal components or features	-	-	-	-
PC11. ensure the modeling of BIM objects for specific purposes to suit the project-specific requirements	-	-	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. deploy the BIM objects to online configurator or export them in an appropriate format	-	-	-	-
PC13. select an appropriate Level of Development (LOD) for the BIM object based on the client requirements, project demand, BIM platform limitations, and applicable modeling practices	-	-	-	-
PC14. assign BIM objects the appropriate and representative category / classification / catalog based on the BIM creation platform	-	-	-	-
PC15. assign the appropriate Industrial Foundation Classes (IFC) parameters to BIM objects to facilitate their exchange and the related information	-	-	-	-
PC16. follow the applicable geometrical requirements for the production of BIM objects, including aspects concerning shape, symbolic items, space and material	-	-	-	-
PC17. ensure the BIM objects have a modelled geometry at the recommended scale and ensure suitable insertion points for their intended use	-	-	-	-
PC18. utilize controlled visible geometry and symbolic components to draw BIM objects	-	-	-	-
PC19. assign suitable dimensions and appropriate geometrical parameters to BIM objects during the design and construction phases as per the applicable size and design requirements	-	-	-	-
PC20. follow the applicable 3D geometry conventions	-	-	-	-
PC21. ensure the BIM object symbolic items are consistent with the applicable practices	-	-	-	-
PC22. ensure the inclusion of indications for 3D space requirements in BIM objects for construction-phase and facility management-phase objects	-	-	-	-
PC23. detect and resolve clashes in BIM objects	-	-	-	-
PC24. model BIM objects with a suitable geometry, showing the appropriate size for major components of the product for a design-phase object	-	-	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. use the appropriate unit of measurement, e.g. units of millimeters and degrees, as per the applicable BIM standards and guidelines	-	-	-	-
PC26. ensure the BIM objects do not have unset or undefined values	-	-	-	-
PC27. combine BIM objects to create a BIM model of the building, with all assets linked to key data required to operate and maintain it effectively	-	-	-	-
NOS Total	30	60	-	10



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N2115
NOS Name	Plan and create BIM objects for BIM models
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Building Information Modeling
NSQF Level	5
Credits	6
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023



Qualification Pack

CON/N2116: Define the properties and names for BIM objects

Description

This OS unit is about naming BIM objects and defining their properties during the process of creating BIM objects.

Scope

The scope covers the following :

- Define the BIM object properties
- Define the names for BIM objects

Elements and Performance Criteria

Define the BIM object properties

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

- PC1.** use the appropriate case, e.g. camel case and title casing for parameter naming
- PC2.** ensure the BIM object property has descriptive and concise naming, e.g. description of property's meaning or definition
- PC3.** ensure appropriate and correct descriptions of BIM objects, e.g. products and materials
- PC4.** ensure the BIM object property does not have abbreviation and truncation when there is no unambiguous definition or industrial consensus
- PC5.** use the most common descriptor for a group as the first part of the name in the BIM object property for its logical sorting (e.g. filter face area, and filter efficiency)
- PC6.** ensure the BIM object property doesn't use symbols
- PC7.** perform BIM object property naming with Boolean data types, as appropriate

Define the names for BIM objects

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

- PC8.** set the name and parameters of BIM objects systematically and logically for their easy management and the understanding of users
- PC9.** follow the applicable BIM object naming methodology in the BIM object library, including format, field definition and limitation, with abbreviations of category, functional type, originator and descriptor fields
- PC10.** ensure the category field indicates the BIM object category / classification / catalog based on the BIM platform system
- PC11.** ensure the originator field has correct information regarding the owner/ creator of the BIM object
- PC12.** indicate the critical characteristics of the BIM object in the descriptor fields
- PC13.** ensure each abbreviation used for naming BIM objects is unique
- PC14.** follow the applicable limitations on the number of characters in the BIM object name

Knowledge and Understanding (KU)



Qualification Pack

The individual on the job needs to know and understand:

- KU1.** the functional requirements of BIM objects, including BIM object naming conventions and expected behaviour
- KU2.** the applicable BIM object naming conventions
- KU3.** the importance of ensuring clearly defined BIM object property, i.e. consistent BIM object selection and submission between different stages
- KU4.** the appropriate case to be used for BIM parameter naming
- KU5.** the importance of ensuring descriptive and concise naming for BIM objects
- KU6.** the appropriate descriptions to be used for BIM objects
- KU7.** the importance of avoiding abbreviation, truncation and symbols in BIM object properties
- KU8.** the practice of BIM object property naming with Boolean data types
- KU9.** the benefit of setting the name and parameters of BIM objects systematically and logically
- KU10.** the applicable BIM object naming methodology in the BIM object library
- KU11.** the critical characteristics of BIM objects
- KU12.** the importance of using unique abbreviation for naming BIM objects
- KU13.** the limitations applicable on the number of characters in the BIM object name

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



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Define the BIM object properties</i>	15	30	-	5
PC1. use the appropriate case, e.g. camel case and title casing for parameter naming	-	-	-	-
PC2. ensure the BIM object property has descriptive and concise naming, e.g. description of property's meaning or definition	-	-	-	-
PC3. ensure appropriate and correct descriptions of BIM objects, e.g. products and materials	-	-	-	-
PC4. ensure the BIM object property does not have abbreviation and truncation when there is no unambiguous definition or industrial consensus	-	-	-	-
PC5. use the most common descriptor for a group as the first part of the name in the BIM object property for its logical sorting (e.g. filter face area, and filter efficiency)	-	-	-	-
PC6. ensure the BIM object property doesn't use symbols	-	-	-	-
PC7. perform BIM object property naming with Boolean data types, as appropriate	-	-	-	-
<i>Define the names for BIM objects</i>	15	30	-	5
PC8. set the name and parameters of BIM objects systematically and logically for their easy management and the understanding of users	-	-	-	-
PC9. follow the applicable BIM object naming methodology in the BIM object library, including format, field definition and limitation, with abbreviations of category, functional type, originator and descriptor fields	-	-	-	-
PC10. ensure the category field indicates the BIM object category / classification / catalog based on the BIM platform system	-	-	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. ensure the originator field has correct information regarding the owner/ creator of the BIM object	-	-	-	-
PC12. indicate the critical characteristics of the BIM object in the descriptor fields	-	-	-	-
PC13. ensure each abbreviation used for naming BIM objects is unique	-	-	-	-
PC14. follow the applicable limitations on the number of characters in the BIM object name	-	-	-	-
NOS Total	30	60	-	10



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N2116
NOS Name	Define the properties and names for BIM objects
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Building Information Modeling
NSQF Level	5
Credits	4
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023



Qualification Pack

CON/N2117: Set the BIM object behaviour and coordinate quality check

Description

This OS unit is about setting the BIM object behaviour and coordinating the quality check of BIM objects.

Scope

The scope covers the following :

- Set the BIM object behaviour
- Carry out documentation
- Coordinate BIM object quality check

Elements and Performance Criteria

Set the BIM object behaviour

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

- PC1.** ensure the BIM objects are not compromised by the performance of the project model in which it is placed, and are not modeled to a higher LOD than is required for their intended purpose
- PC2.** perform modeling of BIM objects in a manner to allow easy control of its behaviour by different users in different projects
- PC3.** assign suitable host/ placement behaviour to BIM objects based on the BIM platform system
- PC4.** ensure the BIM objects have the ability to be associated and connected with other objects where the association is appropriate to the project model and its analysis
- PC5.** ensure the BIM objects can be scheduled in the project
- PC6.** ensure the inclusion of appropriate symbolic items in BIM objects, that can be controlled to suit 2D/ 3D purposes
- PC7.** ensure the BIM objects are capable of being scheduled in the project environment with correct information

Carry out documentation

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

- PC8.** prepare a comprehensive cover sheet for BIM objects detailing they are complete and satisfy the applicable requirements and functions for drawing production
- PC9.** ensure the BIM object cover sheet includes the appropriate information, e.g. 3D Geometry, Property/ Parameter, 2D – Symbol, Drawing Production, etc.

Coordinate BIM object quality check

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

- PC10.** coordinate with the relevant personnel for BIM object quality check and verify the BIM object functions and behavior
- PC11.** maintain the BIM object quality assurance form in the recommended format for clients/ receivers
- PC12.** ensure the quality assurance form has the required information, e.g. file size, category, unit, space, visibility control, etc.



Qualification Pack

PC13. follow the applicable procedure for the submission and inclusion of BIM objects in the relevant BIM object library

PC14. purge the BIM objects before submission

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the importance of ensuring BIM objects are not compromised by the performance of the project model in which they are placed
- KU2.** the importance of modeling BIM objects to the recommended LOD for their intended purpose
- KU3.** how to model BIM objects in such a manner to allow different users control their behaviour
- KU4.** the benefit of modeling BIM object to allow them to associate and connect with other BIM objects
- KU5.** how to make BIM objects available to be scheduled in a BIM project
- KU6.** the appropriate symbolic items to be included in BIM objects to suit 2D and 3D purposes
- KU7.** the functional requirements of BIM objects, including BIM object naming conventions and expected behaviour
- KU8.** the applicable BIM object naming conventions
- KU9.** follow industry practice and project and client requirements in the production of drawings and schedules
- KU10.** the process of preparing cover sheet for BIM objects and the appropriate information to be included in the sheet
- KU11.** the applicable BIM object quality check requirements to verify the BIM object functions and behaviour
- KU12.** the requirement of maintaining the BIM object quality assurance form for clients/ receivers and the appropriate information to be included, e.g. file size, category, unit, space, visibility control, etc.
- KU13.** the benefit of maintaining and using BIM object libraries
- KU14.** the process for the submission and inclusion of BIM objects in the relevant BIM object library
- KU15.** the process of purging BIM objects before submission

Generic Skills (GS)

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

- GS1.** communicate clearly and politely with co-workers and clients
- GS2.** read the relevant literature to learn about the latest developments in the field of work
- GS3.** maintain work-related notes and records
- 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.** identify possible disruptions to work and take appropriate preventive measures



Qualification Pack

GS8. evaluate all possible solutions to a problem to select the best one

GS9. take quick decisions to deal with workplace emergencies/ accidents



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Set the BIM object behaviour</i>	15	30	-	5
PC1. ensure the BIM objects are not compromised by the performance of the project model in which it is placed, and are not modeled to a higher LOD than is required for their intended purpose	-	-	-	-
PC2. perform modeling of BIM objects in a manner to allow easy control of its behaviour by different users in different projects	-	-	-	-
PC3. assign suitable host/ placement behaviour to BIM objects based on the BIM platform system	-	-	-	-
PC4. ensure the BIM objects have the ability to be associated and connected with other objects where the association is appropriate to the project model and its analysis	-	-	-	-
PC5. ensure the BIM objects can be scheduled in the project	-	-	-	-
PC6. ensure the inclusion of appropriate symbolic items in BIM objects, that can be controlled to suit 2D/ 3D purposes	-	-	-	-
PC7. ensure the BIM objects are capable of being scheduled in the project environment with correct information	-	-	-	-
<i>Carry out documentation</i>	5	10	-	2
PC8. prepare a comprehensive cover sheet for BIM objects detailing they are complete and satisfy the applicable requirements and functions for drawing production	-	-	-	-
PC9. ensure the BIM object cover sheet includes the appropriate information, e.g. 3D Geometry, Property/ Parameter, 2D – Symbol, Drawing Production, etc.	-	-	-	-
<i>Coordinate BIM object quality check</i>	10	20	-	3



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. coordinate with the relevant personnel for BIM object quality check and verify the BIM object functions and behavior	-	-	-	-
PC11. maintain the BIM object quality assurance form in the recommended format for clients/ receivers	-	-	-	-
PC12. ensure the quality assurance form has the required information, e.g. file size, category, unit, space, visibility control, etc.	-	-	-	-
PC13. follow the applicable procedure for the submission and inclusion of BIM objects in the relevant BIM object library	-	-	-	-
PC14. purge the BIM objects before submission	-	-	-	-
NOS Total	30	60	-	10



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N2117
NOS Name	Set the BIM object behaviour and coordinate quality check
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Building Information Modeling
NSQF Level	5
Credits	4
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023



Qualification Pack

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



Qualification Pack

- 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



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure health and safety at work</i>	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	-	-	-	-
<i>Manage workplace emergencies</i>	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	-	-	-	-



Qualification Pack

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	-	-



Qualification Pack

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



Qualification Pack

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

Description

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

Scope

The scope covers the following :

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

Elements and Performance Criteria

Introduction to Employability Skills

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

- PC1.** identify employability skills required for jobs in various industries
- PC2.** identify and explore learning and employability portals

Constitutional values – Citizenship

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

- PC3.** recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.
- PC4.** follow environmentally sustainable practices

Becoming a Professional in the 21st Century

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

- PC5.** recognize the significance of 21st Century Skills for employment
- PC6.** practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

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



Qualification Pack

- PC7.** use basic English for everyday conversation in different contexts, in person and over the telephone
- PC8.** read and understand routine information, notes, instructions, mails, letters etc. written in English
- PC9.** write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

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

- PC10.** understand the difference between job and career
- PC11.** prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

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

- PC12.** follow verbal and non-verbal communication etiquette and active listening techniques in various settings
- PC13.** work collaboratively with others in a team

Diversity & Inclusion

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

- PC14.** communicate and behave appropriately with all genders and PwD
- PC15.** escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

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

- PC16.** select financial institutions, products and services as per requirement
- PC17.** carry out offline and online financial transactions, safely and securely
- PC18.** identify common components of salary and compute income, expenses, taxes, investments etc
- PC19.** identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

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

- PC20.** operate digital devices and carry out basic internet operations securely and safely
- PC21.** use e- mail and social media platforms and virtual collaboration tools to work effectively
- PC22.** use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

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

- PC23.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- PC24.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- PC25.** identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

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

- PC26.** identify different types of customers
- PC27.** identify and respond to customer requests and needs in a professional manner.



Qualification Pack

PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC29. create a professional Curriculum vitae (Résumé)

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

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

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

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

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

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

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

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

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

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

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

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

KU11. how to compute income and expenditure

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

KU13. different legal rights and laws

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

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

KU16. how to identify business opportunities

KU17. types and needs of customers

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

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

Generic Skills (GS)

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

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

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



Qualification Pack

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



Qualification Pack

Assessment Criteria

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



Qualification Pack

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



Qualification Pack

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



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
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.



Qualification Pack

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/N2115.Plan and create BIM objects for BIM models	30	60	0	10	100	25
CON/N2116.Define the properties and names for BIM objects	30	60	0	10	100	25
CON/N2117.Set the BIM object behaviour and coordinate quality check	30	60	0	10	100	30
CON/N9003.Manage health and safety at the workplace	40	60	0	0	100	10
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	10
Total	150	270	0	0	450	100



Qualification Pack

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
EHS	Environment Health and Saf



Qualification Pack

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.



Qualification Pack

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.