

Qualification Pack



Design Engineer

QP Code: SSC/Q6601

Version: 1.0

NSQF Level: 7

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SSC/Q6601: Design Engineer

Brief Job Description

Individuals in this job are responsible for conceptualizing and developing a product based on customer/market needs. Involvement is in all aspects of software development including requirements analysis, design, implementation and testing.

Personal Attributes

This job requires the individual to have thorough knowledge of various technology trends and processes as well as have updated knowledge about IT initiatives. He/she should be highly motivated and energetic with the ability to self-direct daily activities.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [SSC/N0501: Contribute to the design of software products and applications](#)
2. [SSC/N4101: Conduct marketing research and analysis for products](#)
3. [SSC/N9001: Manage your work to meet requirements](#)
4. [SSC/N9002: Work effectively with colleagues](#)
5. [SSC/N9003: Maintain a healthy, safe and secure working environment](#)
6. [SSC/N9004: Provide data/information in standard formats](#)
7. [SSC/N9005: Develop your knowledge, skills and competence](#)

Qualification Pack (QP) Parameters

Sector	IT-ITeS
Sub-Sector	Software Product Development
Occupation	Product Research and Design
Country	India
NSQF Level	7

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Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 2512.0203
Minimum Educational Qualification & Experience	B.E./B.Tech (Computer Science/Computer Engineering/Technology) with 0-6 Months of experience
Minimum Level of Education for Training in School	12th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	31/03/2018
Next Review Date	31/03/2022
NSQC Approval Date	18/06/2015
Version	1.0
Reference code on NQR	2015/ITES/ITSSC/00315
NQR Version	1.0

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SSC/N0501: Contribute to the design of software products and applications

Description

This unit is about contributing to the design of software products and applications where both the business impact and technical complexity are low.

Scope

This unit/task covers the following: Appropriate people:

- line manager
- peers
- subject matter experts Software Requirements Specification includes:
 - functional requirements
 - non-functional requirements High Level Design includes:
 - technical solution selected and its rationale
 - assumptions
 - constraints
 - dependencies
 - interfaces Requirements where:
 - business impact is low
 - technical complexity is low

Elements and Performance Criteria

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

- PC1.** check your understanding of the Business Requirements Specification (BRS)/User Requirements Specification (URS) with appropriate people
- PC2.** check your understanding of the Software Requirements Specification (SRS) with appropriate people
- PC3.** check your understanding of High Level Design (HLD) with appropriate people
- PC4.** design basic programming structures to implement functionality in line with requirements defined in BRS/URS, SRS and HLD
- PC5.** review your designs with appropriate people
- PC6.** analyze inputs from appropriate people to identify, resolve and record design defects and inform future designs
- PC7.** document your designs using standard templates and tools
- PC8.** comply with your organizations policies, procedures and guidelines when contributing to the design of software products and applications

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

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- KU1.** your organizations policies, procedures and guidelines for designing software products and applications and your role and responsibilities in relation to this
- KU2.** your organizations knowledge base and how to access and update this
- KU3.** the scope of work to be carried out and the importance of keeping within these boundaries
- KU4.** who you may need to involve to provide feedback to your designs
- KU5.** the importance of collating feedback on your designs
- KU6.** how to analyze and use feedback to improve your designs
- KU7.** who you may need to involve to provide feedback on your designs
- KU8.** standard templates and tools available and how to use these to document your designs
- KU9.** the approval process for designs of software products and applications
- KU10.** how to interpret and follow different design specifications, including: Business Requirements Specification (BRS) User Requirements Specification (URS) Software Requirements Specification (SRS) High Level Design (HLD)
- KU11.** how to design basic program structures
- KU12.** how to design software products
- KU13.** how to design software applications
- KU14.** different sources of information for help to design software products and specifications
- KU15.** the range of equipment used to design software products and applications
- KU16.** common design defects and how to resolve these
- KU17.** current practice in the infrastructure design of software products and applications
- KU18.** the range of activities involved in designing different software products and applications
- KU19.** how to test new products and applications are fit for purpose
- KU20.** implications new products and applications may have on business processes and business infrastructure

Generic Skills (GS)

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

- GS1.** communicate with colleagues in writing
- GS2.** read instructions, guidelines, procedures, rules and service level agreements
- GS3.** listen effectively and orally communicate information
- GS4.** make a decision on a suitable course of action
- GS5.** plan and organize your work to achieve targets and deadlines
- GS6.** check that your own work meets customer requirements
- GS7.** meet and exceed customer expectations
- GS8.** apply problem-solving approaches in different situations
- GS9.** configure data and disseminate relevant information to others
- GS10.** analyze data and activities
- GS11.** apply balanced judgments to different situations
- GS12.** check your work is complete and free from errors
- GS13.** get your work checked by peers

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- GS14.** work effectively in a team environment
- GS15.** use information technology effectively to input and/or extract data accurately
- GS16.** agree objectives and work requirements
- GS17.** keep up to date with changes, procedures and practices in your role

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	40	60	-	-
PC1. check your understanding of the Business Requirements Specification (BRS)/User Requirements Specification (URS) with appropriate people	5	-	-	-
PC2. check your understanding of the Software Requirements Specification (SRS) with appropriate people	5	-	-	-
PC3. check your understanding of High Level Design (HLD) with appropriate people	5	-	-	-
PC4. design basic programming structures to implement functionality in line with requirements defined in BRS/URS, SRS and HLD	-	40	-	-
PC5. review your designs with appropriate people	10	-	-	-
PC6. analyze inputs from appropriate people to identify, resolve and record design defects and inform future designs	15	-	-	-
PC7. document your designs using standard templates and tools	-	10	-	-
PC8. comply with your organizations policies, procedures and guidelines when contributing to the design of software products and applications	-	10	-	-
NOS Total	40	60	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	SSC/N0501
NOS Name	Contribute to the design of software products and applications
Sector	IT-ITeS
Sub-Sector	IT Services
Occupation	Application Development
NSQF Level	7
Credits	TBD
Version	1.0
Last Reviewed Date	31/03/2018
Next Review Date	31/03/2022
NSQC Clearance Date	NA

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SSC/N4101: Conduct marketing research and analysis for products

Description

This unit is about carrying out research and analysis of market needs for products.

Scope

This unit task covers the following: Research and analysis into:

- geographical markets
- industry sectors
- market segments
- specific products features
- competitorsAppropriate people:
- line manager
- colleagues
- commissioner of the research
- subject matter expertsData information:
- Quantitative
- qualitativeAgreed medium:
- written report
- oral presentation
- social media

Elements and Performance Criteria

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

- PC1.** establish the objectives and scope of research and analysis
- PC2.** obtain guidance from appropriate people within your organization to refine the research and analysis approach and methodology
- PC3.** obtain data information from your organizations knowledge base and published reports to understand overall market industry trends
- PC4.** obtain data information relating to specific products features, competitors and market segments from reliable secondary sources
- PC5.** consolidate data information into standard templates and tools
- PC6.** review data/information with appropriate people and incorporate their inputs
- PC7.** conduct rule-based analysis on data information and draw justifiable inferences
- PC8.** review the analysis and inferences with appropriate people and incorporate their inputs
- PC9.** present the findings to appropriate people through agreed medium using standard templates and tools

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

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- KU1.** your organizations policies, procedures and priorities for conducting research and market analysis for products and your role in applying these
- KU2.** the purpose and aims of any research and analysis you are undertaking
- KU3.** the scope of work to be carried out and the importance of keeping within these boundaries
- KU4.** your organizations knowledge base and how to access documents and information from this
- KU5.** standard templates and tools available and how to use these
- KU6.** market developments and competitive practices within the sector
- KU7.** how to obtain, analyze and use feedback to improve your data information
- KU8.** who to obtain guidance and feedback from when refining your data/information
- KU9.** different processes involved in collecting effective data/information
- KU10.** the importance of recording data/information accurately for research and analysis
- KU11.** how to carry out rule-based analysis on data/information
- KU12.** statistical tools
- KU13.** the methods used to gather environment, market, consumer, competitor and product / service data
- KU14.** different methods used to interpret the market industry trends and how to select the methods best suited to the work being carried out
- KU15.** the importance of validating data information before use and how to do this
- KU16.** how to present research and analysis in a structured way
- KU17.** current practice in conducting market research and analysis
- KU18.** voice of customers (VOC) tools and techniques
- KU19.** usage of social media

Generic Skills (GS)

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

- GS1.** complete accurate well written work with attention to detail
- GS2.** create questionnaire for conducting market research and analysis
- GS3.** read instructions, guidelines, procedures, rules and service level agreements
- GS4.** listen effectively and orally communicate information accurately
- GS5.** effectively present reports and databases
- GS6.** follow rule-based decision-making processes
- GS7.** make decisions on suitable courses of action
- GS8.** plan and organize your work to achieve targets and deadlines
- GS9.** carry out rule-based transactions in line with customer-specific guidelines, procedures, rules and service level agreements
- GS10.** check your own work meets customer requirements
- GS11.** meet and exceed customer expectations
- GS12.** apply problem-solving approaches in different situations
- GS13.** analyze data and activities
- GS14.** configure data and disseminate relevant information to others

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- GS15.** apply balanced judgments to different situations
- GS16.** provide opinions on work in a detailed and constructive way
- GS17.** check your work is complete and free from errors
- GS18.** get your work checked by peers
- GS19.** effectively articulate and present any information
- GS20.** work effectively in a team environment
- GS21.** use information technology effectively to input and or extract data accurately
- GS22.** identify and refer anomalies in data
- GS23.** store and retrieve information
- GS24.** agree objectives and work requirements
- GS25.** keep up to date with changes, procedures and practices in your role
- GS26.** use effective research methodologies, sampling techniques and sample group selection

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	25	75	-	-
PC1. establish the objectives and scope of research and analysis	10	-	-	-
PC2. obtain guidance from appropriate people within your organization to refine the research and analysis approach and methodology	10	-	-	-
PC3. obtain data information from your organizations knowledge base and published reports to understand overall market industry trends	-	15	-	-
PC4. obtain data information relating to specific products features, competitors and market segments from reliable secondary sources	-	15	-	-
PC5. consolidate data information into standard templates and tools	-	15	-	-
PC6. review data/information with appropriate people and incorporate their inputs	5	-	-	-
PC7. conduct rule-based analysis on data information and draw justifiable inferences	-	10	-	-
PC8. review the analysis and inferences with appropriate people and incorporate their inputs	-	10	-	-
PC9. present the findings to appropriate people through agreed medium using standard templates and tools	-	10	-	-
NOS Total	25	75	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	SSC/N4101
NOS Name	Conduct marketing research and analysis for products
Sector	IT-ITeS
Sub-Sector	Engineering R&D
Occupation	Product Marketing, Sales and Marketing/Business Development, Product Lifecycle Management, Product Research and Design
NSQF Level	7
Credits	NA
Version	1.0
Last Reviewed Date	31/03/2018
Next Review Date	31/03/2022
NSQC Clearance Date	NA

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SSC/N9001: Manage your work to meet requirements

Description

This unit is about planning and organizing your work in order to complete it to the required standards on time.

Elements and Performance Criteria

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

- PC1.** establish and agree your work requirements with appropriate people
- PC2.** keep your immediate work area clean and tidy
- PC3.** utilize your time effectively
- PC4.** use resources correctly and efficiently
- PC5.** treat confidential information correctly
- PC6.** work in line with your organizations policies and procedures
- PC7.** work within the limits of your job role
- PC8.** obtain guidance from appropriate people, where necessary
- PC9.** ensure your work meets the agreed requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** your organizations policies, procedures and priorities for your area of work and your role and responsibilities in carrying out your work
- KU2.** limits of your responsibilities and when to involve others
- KU3.** your specific work requirements and who these must be agreed with
- KU4.** the importance of having a tidy work area and how to do this
- KU5.** how to prioritize your workload according to urgency and importance and the benefits of this
- KU6.** your organizations policies and procedures for dealing with confidential information and the importance of complying with these
- KU7.** the purpose of keeping others updated with the progress of your work
- KU8.** who to obtain guidance from and the typical circumstances when this may be required
- KU9.** the purpose and value of being flexible and adapting work plans to reflect change
- KU10.** the importance of completing work accurately and how to do this
- KU11.** appropriate timescales for completing your work and the implications of not meeting these for you and the organization
- KU12.** resources needed for your work and how to obtain and use these

Generic Skills (GS)

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

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- GS1.** complete accurate work with attention to detail
- GS2.** read instructions, guidelines, procedures, rules and service level agreements
- GS3.** ask for clarification and advice from line managers
- GS4.** communicate orally with colleagues
- GS5.** make decisions on suitable courses
- GS6.** plan and organize your work to achieve targets and deadlines
- GS7.** agree objectives and work requirements
- GS8.** deliver consistent and reliable service to customers
- GS9.** check your own work meets customer requirements
- GS10.** refer anomalies to the line manager
- GS11.** seek clarification on problems from others
- GS12.** provide relevant information to others
- GS13.** analyze needs, requirements and dependencies in order to meet your work requirements
- GS14.** apply judgments to different situations
- GS15.** check your work is complete and free from errors
- GS16.** get your work checked by peers
- GS17.** work effectively in a team environment
- GS18.** use information technology effectively, to input and/or extract data accurately
- GS19.** identify and refer anomalies in data
- GS20.** store and retrieve information
- GS21.** keep up to date with changes, procedures and practices in your role

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	25	75	-	-
PC1. establish and agree your work requirements with appropriate people	-	6.25	-	-
PC2. keep your immediate work area clean and tidy	6.25	6.25	-	-
PC3. utilize your time effectively	6.25	6.25	-	-
PC4. use resources correctly and efficiently	6.25	12.5	-	-
PC5. treat confidential information correctly	-	6.25	-	-
PC6. work in line with your organizations policies and procedures	-	12.5	-	-
PC7. work within the limits of your job role	-	6.25	-	-
PC8. obtain guidance from appropriate people, where necessary	-	6.25	-	-
PC9. ensure your work meets the agreed requirements	6.25	12.5	-	-
NOS Total	25	75	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	SSC/N9001
NOS Name	Manage your work to meet requirements
Sector	IT-ITeS
Sub-Sector	IT Services
Occupation	Across all occupations
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	27/01/2022
Next Review Date	27/01/2025
NSQF Clearance Date	27/01/2022

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SSC/N9002: Work effectively with colleagues

Description

This unit is about working effectively with colleagues, either in your own work group or in other work groups within your organization.

Scope

This unit/task covers the following: Colleagues:

- line manager
 - members of your own work group
 - people in other work groups in your organization
- Communicate:
- face-to-face
 - by telephone
 - in writing

Elements and Performance Criteria

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

- PC1.** communicate with colleagues clearly, concisely and accurately
- PC2.** work with colleagues to integrate your work effectively with theirs
- PC3.** pass on essential information to colleagues in line with organizational requirements
- PC4.** work in ways that show respect for colleagues
- PC5.** carry out commitments you have made to colleagues
- PC6.** let colleagues know in good time if you cannot carry out your commitments, explaining the reasons
- PC7.** identify any problems you have working with colleagues and take the initiative to solve these problems
- PC8.** follow the organizations policies and procedures for working with colleagues

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** your organizations policies and procedures for working with colleagues and your role and responsibilities in relation to this
- KU2.** the importance of effective communication and establishing good working relationships with colleagues
- KU3.** different methods of communication and the circumstances in which it is appropriate to use these
- KU4.** benefits of developing productive working relationships with colleagues
- KU5.** the importance of creating an environment of trust and mutual respect in an environment where you have no authority over those you are working with

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- KU6.** where you do not meet your commitments, the implications this will have on individuals and the organization
- KU7.** different types of information that colleagues might need and the importance of providing this information when it is required
- KU8.** the importance of understanding problems from your colleagues perspective and how to provide support, where necessary, to resolve these

Generic Skills (GS)

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

- GS1.** complete accurate, well written work with attention to detail
- GS2.** communicate effectively with colleagues in writing
- GS3.** read instructions, guidelines, procedures, rules and service level agreements
- GS4.** listen effectively and orally communicate information accurately
- GS5.** ask for clarification and advice from line managers
- GS6.** make decisions on suitable courses of action
- GS7.** plan and organize your work to achieve targets and deadlines
- GS8.** check your own work meets customer requirements
- GS9.** deliver consistent and reliable service to customers
- GS10.** apply problem solving approaches in different situations
- GS11.** apply balanced judgments to different situations
- GS12.** check your work is complete and free from error
- GS13.** get your work checked by peers
- GS14.** work effectively in a team environment
- GS15.** work effectively with colleagues and other teams
- GS16.** treat other cultures with respect
- GS17.** identify and refer anomalies
- GS18.** help reach agreements with colleagues
- GS19.** keep up to date with changes, procedures and practices in your role

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	20	80	-	-
PC1. communicate with colleagues clearly, concisely and accurately	-	20	-	-
PC2. work with colleagues to integrate your work effectively with theirs	-	10	-	-
PC3. pass on essential information to colleagues in line with organizational requirements	10	-	-	-
PC4. work in ways that show respect for colleagues	-	20	-	-
PC5. carry out commitments you have made to colleagues	-	10	-	-
PC6. let colleagues know in good time if you cannot carry out your commitments, explaining the reasons	10	-	-	-
PC7. identify any problems you have working with colleagues and take the initiative to solve these problems	-	10	-	-
PC8. follow the organizations policies and procedures for working with colleagues	-	10	-	-
NOS Total	20	80	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	SSC/N9002
NOS Name	Work effectively with colleagues
Sector	IT-ITeS
Sub-Sector	IT Services
Occupation	Across all occupations
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	31/03/2018
Next Review Date	31/03/2022
NSQC Clearance Date	NA

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SSC/N9003: Maintain a healthy, safe and secure working environment

Description

This unit is about monitoring your working environment and making sure it meets requirements for health, safety and security

Elements and Performance Criteria

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

- PC1.** comply with your organizations current health, safety and security policies and procedures
- PC2.** report any identified breaches in health, safety, and security policies and procedures to the designated person
- PC3.** identify and correct any hazards that you can deal with safely, competently and within the limits of your authority
- PC4.** report any hazards that you are not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected
- PC5.** follow your organizations emergency procedures promptly, calmly, and efficiently
- PC6.** identify and recommend opportunities for improving health, safety, and security to the designated person
- PC7.** complete any health and safety records legibly and accurately

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** legislative requirements and organizations procedures for health, safety and security and your role and responsibilities in relation to this
- KU2.** what is meant by a hazard, including the different types of health and safety hazards that can be found in the workplace
- KU3.** how and when to report hazards
- KU4.** limits of your responsibility for dealing with hazards
- KU5.** your organizations emergency procedures for different emergency situations and the importance of following these
- KU6.** the importance of maintaining high standards of health, safety and security
- KU7.** implications that any non-compliance with health, safety and security may have on individuals and the organization
- KU8.** different types of breaches in health, safety and security and how and when to report these
- KU9.** evacuation procedures for workers and visitors
- KU10.** how to summon medical assistance and the emergency services, where necessary
- KU11.** how to use the health, safety and accident reporting procedures and the importance of these
- KU12.** government agencies in the areas of safety, health and security and their norms and services

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Generic Skills (GS)

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

- GS1.** complete accurate, well written work with attention to detail
- GS2.** read instructions, guidelines, procedures, rules and service level agreements
- GS3.** listen effectively and orally communicate information accurately
- GS4.** make decisions on suitable courses of action
- GS5.** plan and organize your work to meet health, safety and security requirements
- GS6.** build and maintain positive and effective relationships with colleagues and customers
- GS7.** apply problem solving approaches in different situations
- GS8.** analyze data and activities
- GS9.** apply balanced judgments to different situations
- GS10.** check your work is complete and free from errors
- GS11.** get your work checked by peers
- GS12.** work effectively in a team environment
- GS13.** identify and refer anomalies
- GS14.** help reach agreements with colleagues
- GS15.** keep up to date with changes, procedures and practices in your role

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	30	70	-	-
PC1. comply with your organizations current health, safety and security policies and procedures	10	10	-	-
PC2. report any identified breaches in health, safety, and security policies and procedures to the designated person	-	10	-	-
PC3. identify and correct any hazards that you can deal with safely, competently and within the limits of your authority	10	10	-	-
PC4. report any hazards that you are not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected	-	10	-	-
PC5. follow your organizations emergency procedures promptly, calmly, and efficiently	10	10	-	-
PC6. identify and recommend opportunities for improving health, safety, and security to the designated person	-	10	-	-
PC7. complete any health and safety records legibly and accurately	-	10	-	-
NOS Total	30	70	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	SSC/N9003
NOS Name	Maintain a healthy, safe and secure working environment
Sector	IT-ITes
Sub-Sector	IT Services
Occupation	Across all occupations
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	27/01/2022
Next Review Date	27/01/2025
NSQF Clearance Date	27/01/2022

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SSC/N9004: Provide data/information in standard formats

Description

This unit is about providing specified data/information related to your work in templates or other standard formats.

Scope

This unit/task covers the following: Appropriate people:

- line manager
 - members of your own work group
 - people in other work groups in your organization
 - subject matter experts
- Data/information:
- Quantitative
 - Qualitative
- Sources:
- within your organization
 - outside your organization
- Formats:
- paper-based
 - electronic

Elements and Performance Criteria

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

- PC1.** establish and agree with appropriate people the data/information you need to provide, the formats in which you need to provide it, and when you need to provide it
- PC2.** obtain the data/information from reliable sources
- PC3.** check that the data/information is accurate, complete and up-to-date
- PC4.** obtain advice or guidance from appropriate people where there are problems with the data/information
- PC5.** carry out rule-based analysis of the data/information, if required
- PC6.** insert the data/information into the
- PC7.** check the accuracy of your work, involving colleagues where required
- PC8.** report any unresolved anomalies in the data/information to appropriate people
- PC9.** provide complete, accurate and up-to-date data/information to the appropriate people in the required formats on time

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** your organizations procedures and guidelines for providing data/information in standard formats and your role and responsibilities in relation to this
- KU2.** the knowledge management culture of your organization

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- KU3.** your organizations policies and procedures for recording and sharing information and the importance of complying with these
- KU4.** the importance of validating data/information before use and how to do this
- KU5.** procedures for updating data in appropriate formats and with proper validation
- KU6.** the purpose of the CRM database
- KU7.** how to use the CRM database to record and extract information
- KU8.** the importance of having your data/information reviewed by others
- KU9.** the scope of any data/information requirements including the level of detail required
- KU10.** the importance of keeping within the scope of work and adhering to timescales
- KU11.** data/information you may need to provide including the sources and how to do this
- KU12.** templates and formats used for data/information including their purpose and how to use these
- KU13.** different techniques used to obtain data/information and how to apply these
- KU14.** how to carry out rule-based analysis on the data/information
- KU15.** typical anomalies that may occur in data/information
- KU16.** who to go to in the event of inaccurate data/information and how to report this

Generic Skills (GS)

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

- GS1.** complete accurate, well written work with attention to detail
- GS2.** read instructions, guidelines, procedures, rules and service level agreements
- GS3.** listen effectively and orally communicate information accurately
- GS4.** follow rule-based decision-making processes
- GS5.** make decisions on suitable courses of action
- GS6.** plan and organize your work to achieve targets and deadlines
- GS7.** check your own work meets customer requirements
- GS8.** meet and exceed customer expectations
- GS9.** apply problem solving approaches in different situations
- GS10.** configure data and disseminate relevant information to others
- GS11.** apply balanced judgments to different situations
- GS12.** check your work is complete and free from errors
- GS13.** get your work checked by peers
- GS14.** work effectively in a team environment
- GS15.** use information technology effectively, to input and/or extract data accurately
- GS16.** validate and update data
- GS17.** identify and refer anomalies in data
- GS18.** store and retrieve information
- GS19.** share information using standard formats and templates
- GS20.** keep up to date with changes, procedures and practices in your role

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	25	75	-	-
PC1. establish and agree with appropriate people the data/information you need to provide, the formats in which you need to provide it, and when you need to provide it	12.5	-	-	-
PC2. obtain the data/information from reliable sources	-	12.5	-	-
PC3. check that the data/information is accurate, complete and up-to-date	6.25	6.25	-	-
PC4. obtain advice or guidance from appropriate people where there are problems with the data/information	-	6.25	-	-
PC5. carry out rule-based analysis of the data/information, if required	-	25	-	-
PC6. insert the data/information into the	-	12.5	-	-
PC7. check the accuracy of your work, involving colleagues where required	-	6.25	-	-
PC8. report any unresolved anomalies in the data/information to appropriate people	6.25	-	-	-
PC9. provide complete, accurate and up-to-date data/information to the appropriate people in the required formats on time	-	6.25	-	-
NOS Total	25	75	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SSC/N9004
NOS Name	Provide data/information in standard formats
Sector	IT-ITeS
Sub-Sector	IT Services
Occupation	Across all occupations
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	31/03/2018
Next Review Date	31/03/2022
NSQC Clearance Date	NA

Qualification Pack

SSC/N9005: Develop your knowledge, skills and competence

Description

This unit is about taking action to ensure you have the knowledge and skills you need to perform competently in your current job role and to take on new responsibilities, where required. Competence is defined as: the application of knowledge and skills to perform to the standards required.

Scope

This unit/task covers the following: Appropriate people may be:

- line manager
- human resources specialists
- learning and development specialists
- peers Job role:
- current responsibilities as defined in your job description
- possible future responsibilities Learning and development activities:
- formal education and training programs, leading to certification
- non-formal activities (such as private study, learning from colleagues, project work), designed to meet learning and development objectives but without certification Appropriate action may be:
- undertaking further learning and development activities
- finding further opportunities to apply your knowledge and skills

Elements and Performance Criteria

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

- PC1.** obtain advice and guidance from appropriate people to develop your knowledge, skills and competence
- PC2.** identify accurately the knowledge and skills you need for your job role
- PC3.** identify accurately your current level of knowledge, skills and competence and any learning and development needs
- PC4.** agree with appropriate people a plan of learning and development activities to address your learning needs
- PC5.** undertake learning and development activities in line with your plan
- PC6.** apply your new knowledge and skills in the workplace, under supervision
- PC7.** obtain feedback from appropriate people on your knowledge and skills and how effectively you apply them
- PC8.** review your knowledge, skills and competence regularly and take appropriate action

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** your organizations procedures and guidelines for developing your knowledge, skills and competence and your role and responsibilities in relation to this

Qualification Pack

- KU2.** the importance of developing your knowledge, skills and competence to you and your organization
- KU3.** different methods used by your organization to review skills and knowledge including: training need analysis skills need analysis performance appraisals
- KU4.** how to review your knowledge and skills against your job role using different methods and analyses
- KU5.** different types of learning and development activities available for your job role and how to access these
- KU6.** how to produce a plan to address your learning and development needs, who to agree it with and the importance of undertaking the planned activities
- KU7.** different types of support available to help you plan and undertake learning and development activities and how to access these
- KU8.** why it is important to maintain records of your learning and development
- KU9.** methods of obtaining and accepting feedback from appropriate people on your knowledge skills and competence
- KU10.** how to use feedback to develop in your job role
- KU11.** the knowledge and skills required in your job role
- KU12.** your current learning and development needs in relation to your job role
- KU13.** different types of learning styles and methods including those that help you learn best
- KU14.** the importance of taking responsibility for your own learning and development
- KU15.** to the importance of learning and practicing new concepts, theory and how to apply these in the work environment or on samples
- KU16.** how to explore sample problems and apply solutions

Generic Skills (GS)

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

- GS1.** communicate with colleagues in writing
- GS2.** read instructions, guidelines, procedures
- GS3.** ask for clarification and advice from line managers
- GS4.** make decisions on suitable courses of action
- GS5.** plan and organize your work to achieve targets and deadlines
- GS6.** check your own work meets customer requirements
- GS7.** refer anomalies to the line manager
- GS8.** analyze data and activities
- GS9.** apply balanced judgments to different situations
- GS10.** check your work is complete and free from errors
- GS11.** get your work checked by peers
- GS12.** work effectively in a team environment
- GS13.** use information technology effectively
- GS14.** agree objectives and work requirements

GS15. keep up to date with changes, procedures and practices in your role

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	20	80	-	-
PC1. obtain advice and guidance from appropriate people to develop your knowledge, skills and competence	-	10	-	-
PC2. identify accurately the knowledge and skills you need for your job role	-	10	-	-
PC3. identify accurately your current level of knowledge, skills and competence and any learning and development needs	10	10	-	-
PC4. agree with appropriate people a plan of learning and development activities to address your learning needs	-	10	-	-
PC5. undertake learning and development activities in line with your plan	10	10	-	-
PC6. apply your new knowledge and skills in the workplace, under supervision	-	10	-	-
PC7. obtain feedback from appropriate people on your knowledge and skills and how effectively you apply them	-	10	-	-
PC8. review your knowledge, skills and competence regularly and take appropriate action	-	10	-	-
NOS Total	20	80	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SSC/N9005
NOS Name	Develop your knowledge, skills and competence
Sector	IT-ITeS
Sub-Sector	IT Services
Occupation	Across all occupations
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	16/12/2019
Next Review Date	16/12/2024
NSQC Clearance Date	NA

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) (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
5. In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.
6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

Minimum Aggregate Passing % at QP Level : 70

Qualification Pack

(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
SSC/N0501. Contribute to the design of software products and applications	40	60	-	-	100	15
SSC/N4101. Conduct marketing research and analysis for products	25	75	-	-	100	15
SSC/N9001. Manage your work to meet requirements	25	75	-	-	100	14
SSC/N9002. Work effectively with colleagues	20	80	-	-	100	14
SSC/N9003. Maintain a healthy, safe and secure working environment	30	70	-	-	100	14
SSC/N9004. Provide data/information in standard formats	25	75	-	-	100	14
SSC/N9005. Develop your knowledge, skills and competence	20	80	-	-	100	14
Total	185	515	-	-	700	100

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
IT-ITes	Information Technology - Information Technology enabled Services
BPM	Business Process Management
BPO	Business Process Outsourcing
KPO	Knowledge Process Outsourcing
LPO	Legal Process Outsourcing
IPO	Information Process Outsourcing
BCA	Bachelor of Computer Applications
B.Sc	. Bachelor of Science

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.

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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.
Helpdesk	Helpdesk is an entity to which the customers will report their IT problems. IT Service Helpdesk Attendant is responsible for managing the helpdesk.



Design Engineer

QP Code: SSC/Q6601

Version: 2.0

NSQF Level: 7

IT-ITeS Sector Skill Council || NASSCOM Plot No - 7, 8, 9 & 10, 3rd Floor, Sector 126
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SSC/Q6601: Design Engineer

Brief Job Description

Individuals in this job are responsible for conceptualizing and developing a product based on customer/market needs. Involvement is in all aspects of software development including requirements analysis, design, implementation and testing.

Personal Attributes

This job requires the individual to have thorough knowledge of various technology trends and processes as well as have updated knowledge about IT initiatives. He/she should be highly motivated and energetic with the ability to self-direct daily activities.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [SSC/N0501: Contribute to the design of software products and applications](#)
2. [SSC/N4101: Conduct marketing research and analysis for products](#)
3. [SSC/N9001: Manage your work to meet requirements](#)
4. [SSC/N9002: Work effectively with colleagues](#)
5. [SSC/N9003: Maintain a healthy, safe and secure working environment](#)
6. [SSC/N9004: Provide data/information in standard formats](#)
7. [SSC/N9014: Maintain an inclusive, environmentally sustainable workplace](#)

Qualification Pack (QP) Parameters

Sector	IT-ITeS
Sub-Sector	Software Product Development
Occupation	Product Research and Design
Country	India
NSQF Level	7
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 2512.0203



Minimum Educational Qualification & Experience	B.E./B.Tech (Computer Science/Computer Engineering/Technology) with 0-6 Months of experience
Minimum Level of Education for Training in School	12th Class
Pre-Requisite License or Training	Certifications in SAP, SQL, JavaScript, HTTP, Agile Training on Prototyping
Minimum Job Entry Age	18 Years
Last Reviewed On	28/09/2020
Next Review Date	28/09/2025
NSQC Approval Date	
Version	2.0

SSC/N0501: Contribute to the design of software products and applications

Description

This unit is about contributing to the design of software products and applications where both the business impact and technical complexity are low.

Scope

The scope covers the following :

- Functional and non-functional software requirements
- Selection of technical solution of software related issues and backing rationales through
- proper usage of High Level Design (HLD)
- Seek guidance and advice from peers or supervisors

Elements and Performance Criteria

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

- PC1.** understand Business Requirements Specification (BRS)/User Requirements Specification (URS), and Software Requirements Specification (SRS) with appropriate people
- PC2.** check the understanding of High Level Design (HLD) concept with appropriate people
- PC3.** design basic programming structures to implement functionality in line with requirements defined in BRS/URS, SRS and HLD
- PC4.** review the designs with industry experts
- PC5.** analyze inputs from superiors to identify, resolve and record design defects and inform future designs
- PC6.** document the details of designs using standard templates and tools
- PC7.** comply with organizational policies, procedures and guidelines when contributing to the design of software products and applications

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard operating procedures of the organization's policies, procedures and guidelines for creating documents for knowledge sharing
- KU2.** how to access and update organization's knowledge base
- KU3.** the purpose and scope of the work to be carried out and the importance of keeping within these boundaries
- KU4.** the importance of receiving, collating, analyzing and implementing feedback on the work output
- KU5.** standard templates and tools available and how to use these to document the designs
- KU6.** the approval process for designs of software products and applications
- KU7.** how to design basic program structures, software products and software applications

- KU8.** different sources of information to help design software products and specifications
- KU9.** common design defects and how to resolve these
- KU10.** current practice in the infrastructure design of software products and applications
- KU11.** the range of activities involved in designing different software products and applications
- KU12.** how to test new products and applications are fit for purpose
- KU13.** implications new products and applications may have on business processes and business infrastructure

Generic Skills (GS)

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

- GS1.** produce work output in prescribed format with accurate details
- GS2.** listen actively and communicate with others orally and in writing
- GS3.** seek inputs and suggestions from line managers
- GS4.** get familiarized with current changes in procedures and practices in the role
- GS5.** draw a conclusive plan to complete the tasks within given deadlines
- GS6.** work in a customer facing environment with peers to build and maintain positive and effective relationships with customers to meet their requirements
- GS7.** apply problem-solving approaches in different situation
- GS8.** configure data and disseminate relevant information and constructive opinions, applying balanced judgments to different situations
- GS9.** practice utilizing information technology efficiently to insert or extract data accurately

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	40	60	-	-
PC1. understand Business Requirements Specification (BRS)/User Requirements Specification (URS), and Software Requirements Specification (SRS) with appropriate people	10	-	-	-
PC2. check the understanding of High Level Design (HLD) concept with appropriate people	5	-	-	-
PC3. design basic programming structures to implement functionality in line with requirements defined in BRS/URS, SRS and HLD	-	40	-	-
PC4. review the designs with industry experts	10	-	-	-
PC5. analyze inputs from superiors to identify, resolve and record design defects and inform future designs	15	-	-	-
PC6. document the details of designs using standard templates and tools	-	10	-	-
PC7. comply with organizational policies, procedures and guidelines when contributing to the design of software products and applications	-	10	-	-
NOS Total	40	60	-	-

National Occupational Standards (NOS) Parameters

NOS Code	SSC/N0501
NOS Name	Contribute to the design of software products and applications
Sector	IT-ITeS
Sub-Sector	IT Services
Occupation	Application Development
NSQF Level	7
Credits	TBD
Version	2.0
Next Review Date	NA

SSC/N4101: Conduct marketing research and analysis for products

Description

This unit is about carrying out research and analysis of market needs for products.

Scope

The scope covers the following :

- Research and analysis into geographical markets, industry sectors, market segments, specific products/features, competitors, etc
- Interact with appropriate people like colleagues at the members of research team, subject matter experts, commissioner of the research, line manager, etc.

Elements and Performance Criteria

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

- PC1.** establish the objectives and scope of research and analysis
- PC2.** obtain guidance from line managers within the organization to refine the research and analysis approach/methodology
- PC3.** obtain data information from the organization's knowledge base and published reports to analyze overall market trends
- PC4.** obtain data information relating to specific product's features, competitors and market segments
- PC5.** consolidate data/information and findings through agreed medium into standard templates and tools
- PC6.** review data/information with industry experts and incorporate their inputs
- PC7.** conduct rule-based analysis on data information and draw justifiable inferences

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's policies, procedures and priorities for conducting research and market analysis for products
- KU2.** the purpose and aim of any research and analysis undertaken and the scope of work involved
- KU3.** standard templates and tools available and how to use these
- KU4.** market developments and competitive practices within the sector
- KU5.** how and from whom to obtain, analyze and use feedback to improve your data information
- KU6.** different processes involved in collecting effective data/information
- KU7.** the importance of recording data/information accurately for research and analysis
- KU8.** the methods and statistical tools used to gather environment, market, consumer, competitor and product / service data

- KU9.** different methods used to interpret the market industry trends and how to select the best suitable method
- KU10.** the importance of validating data information before use and present in a structured manner
- KU11.** current practice in conducting market research and analysis
- KU12.** voice of customers (VOC) tools and techniques and social media usage

Generic Skills (GS)

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

- GS1.** apply competency skills to solve problems in different situations
- GS2.** analyze data and refer anomalies to provide accurate reports to the supervisor
- GS3.** listen effectively and orally communicate information accurately
- GS4.** ask for clarification and advice from peers
- GS5.** work effectively in a customer facing environment
- GS6.** configure data and disseminate relevant information to others
- GS7.** provide opinions on work in a detailed and constructive way
- GS8.** create questionnaire for conducting market research and analysis
- GS9.** use information technology effectively to input and/or extract data
- GS10.** carry out rule-based transactions in line with customer-specific guidelines, procedures, and service level agreements

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	25	75	-	-
PC1. establish the objectives and scope of research and analysis	10	-	-	-
PC2. obtain guidance from line managers within the organization to refine the research and analysis approach/methodology	10	-	-	-
PC3. obtain data information from the organization's knowledge base and published reports to analyze overall market trends	-	15	-	-
PC4. obtain data information relating to specific product's features, competitors and market segments	-	15	-	-
PC5. consolidate data/information and findings through agreed medium into standard templates and tools	-	25	-	-
PC6. review data/information with industry experts and incorporate their inputs	5	10	-	-
PC7. conduct rule-based analysis on data information and draw justifiable inferences	-	10	-	-
NOS Total	25	75	-	-

National Occupational Standards (NOS) Parameters

NOS Code	SSC/N4101
NOS Name	Conduct marketing research and analysis for products
Sector	IT-ITeS
Sub-Sector	Engineering R&D
Occupation	Product Marketing, Sales and Marketing/Business Development, Product Lifecycle Management, Product Research and Design
NSQF Level	7
Credits	TBD
Version	2.0
Next Review Date	NA

SSC/N9001: Manage your work to meet requirements

Description

This unit is about planning and organizing your work in order to complete it to the required standards on time.

Scope

The scope covers the following :

- Utilise resources
- Ensure compliance

Elements and Performance Criteria

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

- PC1.** establish and agree your work requirements with appropriate people
- PC2.** keep the immediate work area clean and tidy
- PC3.** utilize time effectively
- PC4.** use resources correctly and efficiently
- PC5.** treat confidential information correctly
- PC6.** work in line with the organization's policies and procedures
- PC7.** work within the limits of the job role
- PC8.** obtain guidance from appropriate people, where necessary
- PC9.** ensure the work meets the agreed requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the priorities for the area of work
- KU2.** role, responsibilities, limits of the responsibilities and whom these must be agreed with, as well as when to involve others
- KU3.** the importance of having a tidy work area and how to do this
- KU4.** how to prioritize your workload according to urgency and importance and the benefits of this
- KU5.** the organizations policies and procedures, especially for dealing with confidential information, and the importance of complying with these
- KU6.** the purpose of keeping others updated with the progress of the work
- KU7.** the purpose and value of being flexible and adapting work plans to reflect change
- KU8.** the importance of completing work accurately and how to do this
- KU9.** appropriate timescales for completing the work and the implications of not meeting these for self and the organization
- KU10.** resources needed for the work and how to obtain and use these

Generic Skills (GS)

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

- GS1.** read instructions, guidelines, procedures, rules and service level agreements
- GS2.** ask for clarification and advice from line managers
- GS3.** communicate orally with colleagues
- GS4.** make decisions on suitable courses
- GS5.** plan and organize the work to achieve targets and deadlines
- GS6.** agree to objectives and work requirements
- GS7.** deliver consistent and reliable service to customers
- GS8.** check that the work meets customer requirements
- GS9.** refer anomalies to the line manager
- GS10.** seek clarification on problems from others
- GS11.** provide relevant information to others
- GS12.** analyze needs, requirements and dependencies in order to meet the work requirements
- GS13.** apply judgments to different situations
- GS14.** ensure the work is complete and free from errors
- GS15.** get the work checked by peers
- GS16.** work effectively in a team environment
- GS17.** use information technology effectively, to input and/or extract data accurately
- GS18.** identify and refer anomalies in data
- GS19.** store and retrieve information
- GS20.** keep up to date with changes, procedures and practices in the role

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	25	75	-	-
PC1. establish and agree your work requirements with appropriate people	-	6.25	-	-
PC2. keep the immediate work area clean and tidy	6.25	6.25	-	-
PC3. utilize time effectively	6.25	6.25	-	-
PC4. use resources correctly and efficiently	6.25	12.5	-	-
PC5. treat confidential information correctly	-	6.25	-	-
PC6. work in line with the organization's policies and procedures	-	12.5	-	-
PC7. work within the limits of the job role	-	6.25	-	-
PC8. obtain guidance from appropriate people, where necessary	-	6.25	-	-
PC9. ensure the work meets the agreed requirements	6.25	12.5	-	-
NOS Total	25	75	-	-

National Occupational Standards (NOS) Parameters

NOS Code	SSC/N9001
NOS Name	Manage your work to meet requirements
Sector	IT-ITeS
Sub-Sector	IT Services, Business Process Management, Engineering R&D, Software Product Development, IT Support Services, Software Products, Future Skills
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	16/08/2019
Next Review Date	22/09/2025
NSQF Clearance Date	22/09/2020

SSC/N9002: Work effectively with colleagues

Description

This unit is about working effectively with colleagues, either in your own work group or in other work groups within your organization.

Scope

The scope covers the following :

- Communicate with colleagues
- Show respect

Elements and Performance Criteria

Communicate with colleagues

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

- PC1.** communicate with colleagues clearly, concisely and accurately
- PC2.** work with colleagues to integrate the work effectively with theirs
- PC3.** pass on essential information to colleagues in line with organizational requirements

Show respect

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

- PC4.** work in ways that show respect for colleagues
- PC5.** carry out commitments one has made to colleagues
- PC6.** identify any problems while working with colleagues and take the initiative to solve these problems
- PC7.** follow the organization's policies and procedures for working with colleagues

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's policies and procedures for working with colleagues and the role and responsibilities in relation to this
- KU2.** the importance of effective communication and establishing good working relationships with colleagues
- KU3.** different methods of communication and the circumstances in which it is appropriate to use these
- KU4.** benefits of developing productive working relationships with colleagues
- KU5.** the importance of creating an environment of trust and mutual respect in an environment where there is no authority over those working with
- KU6.** where you do not meet the commitments, the implications this will have on individuals and the organization
- KU7.** different types of information that colleagues might need and the importance of providing this information when it is required

KU8. the importance of understanding problems from the colleagues perspective and how to provide support, where necessary, to resolve these

Generic Skills (GS)

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

- GS1.** complete accurate, well written work with attention to detail
- GS2.** communicate effectively with colleagues in writing
- GS3.** read instructions, guidelines, procedures, rules and service level agreements
- GS4.** make decisions on suitable courses
- GS5.** ask for clarification and advice from line managers
- GS6.** help reach agreements with colleagues
- GS7.** plan and organize the work to achieve targets and deadlines
- GS8.** ensure the work meets customer requirements, and deliver consistent and reliable service
- GS9.** apply problem solving approaches in different situations
- GS10.** apply balanced judgments to different situations
- GS11.** ensure the work is complete and free from errors
- GS12.** ensure the work is complete and free from errors
- GS13.** work effectively with colleagues and other teams in a team environment
- GS14.** treat other cultures with respect
- GS15.** identify and refer anomalies
- GS16.** keep up to date with changes, procedures and practices in the role

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Communicate with colleagues</i>	18	30	-	-
PC1. communicate with colleagues clearly, concisely and accurately	-	20	-	-
PC2. work with colleagues to integrate the work effectively with theirs	-	10	-	-
PC3. pass on essential information to colleagues in line with organizational requirements	18	-	-	-
<i>Show respect</i>	2	50	-	-
PC4. work in ways that show respect for colleagues	2	20	-	-
PC5. carry out commitments one has made to colleagues	-	10	-	-
PC6. identify any problems while working with colleagues and take the initiative to solve these problems	-	10	-	-
PC7. follow the organization's policies and procedures for working with colleagues	-	10	-	-
NOS Total	20	80	-	-

National Occupational Standards (NOS) Parameters

NOS Code	SSC/N9002
NOS Name	Work effectively with colleagues
Sector	IT-ITeS
Sub-Sector	IT Services, Business Process Management, Engineering R&D, Software Product Development, IT Support Services, Software Products, Future Skills
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	16/08/2019
Next Review Date	22/09/2025
NSQF Clearance Date	22/09/2020

SSC/N9003: Maintain a healthy, safe and secure working environment

Description

This unit is about monitoring your working environment and making sure it meets requirements for health, safety and security

Scope

The scope covers the following :

- Ensure compliance
- Follow safety procedure

Elements and Performance Criteria

Ensure compliance

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

- PC1.** comply with the organization's current health, safety and security policies and procedures
- PC2.** report any identified breaches in health, safety, and security policies and procedures to the designated person
- PC3.** identify and correct any hazards that you can deal with safely, competently and within the limits of your authority
- PC4.** report any hazards that you are not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected

Follow safety procedure

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

- PC5.** follow the organization's emergency procedures promptly, calmly, and efficiently
- PC6.** identify and recommend opportunities for improving health, safety, and security to the designated person
- PC7.** complete any health and safety records legibly and accurately

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** legislative requirements and organization's procedures for health, safety and security and your role and responsibilities in relation to this
- KU2.** what is meant by a hazard, including the different types of health and safety hazards that can be found in the workplace
- KU3.** how and when to report hazards
- KU4.** limits of your responsibility for dealing with hazards
- KU5.** the organization's emergency procedures for different emergency situations and the importance of following these
- KU6.** the importance of maintaining high standards of health, safety and security

- KU7.** implications that any non-compliance with health, safety and security may have on individuals and the organization
- KU8.** types of breaches in health, safety and security and how and when to report these
- KU9.** evacuation procedures for workers and visitors
- KU10.** how to summon medical assistance and the emergency services, where necessary
- KU11.** how to use the health, safety and accident reporting procedures and the importance of these
- KU12.** government agencies in the areas of safety, health and security and their norms and services

Generic Skills (GS)

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

- GS1.** complete accurate, well written work with attention to detail
- GS2.** read instructions, guidelines, procedures, rules and service level agreements
- GS3.** listen effectively and orally communicate information accurately
- GS4.** make decisions on suitable courses of action
- GS5.** plan and organize your work to meet health, safety and security requirements
- GS6.** build and maintain positive and effective relationships with colleagues and customers
- GS7.** apply problem solving approaches in different situations
- GS8.** analyze data and activities
- GS9.** apply balanced judgments to different situations
- GS10.** check that the work is complete and free from errors
- GS11.** work effectively in a team environment
- GS12.** identify and refer anomalies
- GS13.** help reach agreements with colleagues
- GS14.** keep up to date with changes, procedures and practices in the job role

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure compliance</i>	20	40	-	-
PC1. comply with the organization's current health, safety and security policies and procedures	10	10	-	-
PC2. report any identified breaches in health, safety, and security policies and procedures to the designated person	-	10	-	-
PC3. identify and correct any hazards that you can deal with safely, competently and within the limits of your authority	10	10	-	-
PC4. report any hazards that you are not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected	-	10	-	-
<i>Follow safety procedure</i>	10	30	-	-
PC5. follow the organization's emergency procedures promptly, calmly, and efficiently	10	10	-	-
PC6. identify and recommend opportunities for improving health, safety, and security to the designated person	-	10	-	-
PC7. complete any health and safety records legibly and accurately	-	10	-	-
NOS Total	30	70	-	-

National Occupational Standards (NOS) Parameters

NOS Code	SSC/N9003
NOS Name	Maintain a healthy, safe and secure working environment
Sector	IT-ITeS
Sub-Sector	IT Services, Business Process Management, Engineering R&D, Software Product Development, IT Support Services, Software Products, Future Skills
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	4.0
Last Reviewed Date	25/11/2021
Next Review Date	25/11/2024
NSQF Clearance Date	25/11/2021

SSC/N9004: Provide data/information in standard formats

Description

This unit is about providing specified data/information related to your work in templates or other standard formats.

Scope

The scope covers the following :

- Obtain information
- Analyze and report information

Elements and Performance Criteria

Obtain information

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

- PC1.** establish and agree with appropriate people the data/information you need to provide, the formats in which you need to provide it, and when you need to provide it
- PC2.** obtain the data/information from reliable sources
- PC3.** check that the obtained data/information is accurate, complete and up-to-date
- PC4.** obtain advice or guidance from appropriate people where there are problems with the data/information

Analyze and report information

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

- PC5.** carry out rule-based analysis of the data/information, if required
- PC6.** insert the data/information into the agreed formats
- PC7.** report any unresolved anomalies in the data/ information to appropriate people
- PC8.** provide complete, accurate and up-to-date data/information to the appropriate people in the required formats on time

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's procedures and guidelines for providing data/information in standard formats and the role and responsibilities in relation to this
- KU2.** the knowledge management culture of the organization
- KU3.** the organization's policies and procedures for recording and sharing information and the importance of complying with these
- KU4.** the importance of validating data/information before use and how to do this
- KU5.** procedures for updating data in appropriate formats and with proper validation
- KU6.** the purpose of the CRM database
- KU7.** how to use the CRM database to record and extract information

- KU8.** the importance of having data/information reviewed by others
- KU9.** the scope of any data/information requirements including the level of detail required
- KU10.** the importance of keeping within the scope of work and adhering to timescales
- KU11.** data/information one may need to provide including the sources and how to do this
- KU12.** templates and formats used for data/information including their purpose and how to use these
- KU13.** different techniques used to obtain data/information and how to apply these
- KU14.** rule-based analysis on the data/information
- KU15.** typical anomalies that may occur in data/information
- KU16.** whom to go to in the event of inaccurate data/information and how to report this

Generic Skills (GS)

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

- GS1.** complete accurate, well written work with attention to detail
- GS2.** read instructions, guidelines, procedures, rules and service level agreements
- GS3.** listen effectively and orally communicate information accurately
- GS4.** follow rule-based decision-making processes
- GS5.** make decisions on suitable courses of action
- GS6.** plan and organize the work to achieve targets and deadlines
- GS7.** check the work meets customer requirements and exceed customer expectations
- GS8.** apply problem solving approaches in different situations
- GS9.** configure data and disseminate relevant information to others
- GS10.** apply balanced judgments to different situations
- GS11.** use information technology effectively, to input and/or extract data accurately
- GS12.** validate and update data
- GS13.** store and retrieve information

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Obtain information</i>	18.75	31.25	-	-
PC1. establish and agree with appropriate people the data/information you need to provide, the formats in which you need to provide it, and when you need to provide it	12.5	-	-	-
PC2. obtain the data/information from reliable sources	-	12.5	-	-
PC3. check that the obtained data/information is accurate, complete and up-to-date	6.25	6.25	-	-
PC4. obtain advice or guidance from appropriate people where there are problems with the data/information	-	12.5	-	-
<i>Analyze and report information</i>	6.25	43.75	-	-
PC5. carry out rule-based analysis of the data/information, if required	-	25	-	-
PC6. insert the data/information into the agreed formats	-	12.5	-	-
PC7. report any unresolved anomalies in the data/ information to appropriate people	6.25	-	-	-
PC8. provide complete, accurate and up-to-date data/information to the appropriate people in the required formats on time	-	6.25	-	-
NOS Total	25	75	-	-

National Occupational Standards (NOS) Parameters

NOS Code	SSC/N9004
NOS Name	Provide data/information in standard formats
Sector	IT-ITeS
Sub-Sector	IT Services, Business Process Management, Engineering R&D, Software Product Development, IT Support Services, Software Products, Future Skills
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	31/03/2020
Next Review Date	22/09/2025
NSQF Clearance Date	22/09/2020

SSC/N9014: Maintain an inclusive, environmentally sustainable workplace

Description

The unit is about implementing and improving diversity equality and inclusion in a sustainable and environment friendly workplace.

Scope

The scope covers the following :

- Sustainable Practices
- Respect diversity and strengthen practices to promote equity (equality)/inclusivity

Elements and Performance Criteria

Sustainable Practices

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

- PC1.** optimize usage of electricity/energy, materials, and water in various asks / activities / processes and plan the implementation of energy efficient systems in a phased manner
- PC2.** segregate recyclable, non-recyclable and hazardous waste generated for disposal or efficient waste management

Respect diversity and strengthen practices to promote equity (equality)/inclusivity

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

- PC3.** understand the diversity policy of the organization and use internal & external communication to colleagues to improve
- PC4.** comply with PwD inclusive policies for an adaptable and equitable work environment
- PC5.** improve through specifically designed recruitment practices, PwD friendly infrastructure, job roles, etc.
- PC6.** use and advocate for appropriate verbal/nonverbal communication, schemes and benefits of PwD.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's policies and procedures about gender inclusivity, equality and sustainability while working with colleagues and your role and responsibilities in relation to this
- KU2.** inclusive tools and practices of communication to acknowledge/validate, share and promote the cause of gender parity at workplace. For example - supporting women with mentorship programs, speaking out against discriminatory practices or harassment
- KU3.** the concept of gender, gender equality and gender discrimination, and all forms of gender discrimination, violence and inequality, including the current and historical causes of gender inequality in the workplace
- KU4.** how to maintain and provide a conducive work environment that is free from any harassment. facilities and amenities to PwD to perform and excel in their role



- KU5.** organization's redressal mechanisms (like the POSH committee) to address harassment and bias at the workplace, with awareness of prevalent legislations against bias and sexual harassment
- KU6.** initiatives towards efficient use of natural resources and energy, reduction and prevention of pollution and promoting waste avoidance and recycling measures in line with internationally disseminated technologies and practices
- KU7.** all about various energy options including renewable and non-renewable with their environmental impacts, health issues, usage, safety and energy security
- KU8.** implications that any non-compliance with electricity and energy may have on individuals and the organization
- KU9.** the organization's electricity first aid emergency procedures
- KU10.** how to monitor, measure and report performance of environmental conservation
- KU11.** different types of electricity accidents, safety and security and how and when to report these
- KU12.** how to use the electricity/energy safety, accident reporting, emergency procedures and the importance of these

Generic Skills (GS)

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

- GS1.** read PwD instructions, guidelines, procedures, diversity policies/acts, rules and service level agreements
- GS2.** be aware of one's own gender identity and gender role and respectful of the gender performances of others
- GS3.** organize team building or sensitization workshops to address gender biases, stereotypes and potentially blind spots
- GS4.** clarify personal norms and values related to energy production and usage as well as to reflect and evaluate their own energy usage in terms of efficiency and sufficiency
- GS5.** listen and communicate (oral) effectively and accurately on all PwD policies
- GS6.** apply balanced judgments in gender diversity situations
- GS7.** take action to reduce the carbon footprint of business activities and embed environmental responsibility
- GS8.** calibration session with employees to discuss gender biases, stereotypes and potentially blind spots

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Sustainable Practices</i>	10	30	-	-
PC1. optimize usage of electricity/energy, materials, and water in various asks / activities / processes and plan the implementation of energy efficient systems in a phased manner	5	15	-	-
PC2. segregate recyclable, non-recyclable and hazardous waste generated for disposal or efficient waste management	5	15	-	-
<i>Respect diversity and strengthen practices to promote equity (equality)/inclusivity</i>	10	50	-	-
PC3. understand the diversity policy of the organization and use internal & external communication to colleagues to improve	5	10	-	-
PC4. comply with PwD inclusive policies for an adaptable and equitable work environment	-	10	-	-
PC5. improve through specifically designed recruitment practices, PwD friendly infrastructure, job roles, etc.	-	20	-	-
PC6. use and advocate for appropriate verbal/nonverbal communication, schemes and benefits of PwD.	5	10	-	-
NOS Total	20	80	-	-

National Occupational Standards (NOS) Parameters

NOS Code	SSC/N9014
NOS Name	Maintain an inclusive, environmentally sustainable workplace
Sector	IT-ITeS
Sub-Sector	IT Services, Business Process Management, Engineering R&D, Software Product Development, Future Skills
Occupation	Generic,
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	27/01/2022
Next Review Date	27/01/2027
NSQC Clearance Date	22/09/2020

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

- 1.Criteria for assessment for each Qualification Pack (QP) will be created by the Sector Skill Council (SSC). Each performance criteria (PC) will be assigned Theory and Skill/Practical marks proportional to its importance in NOS.
- 2.The assessment will be conducted online through assessment providers authorised by SSC.
- 3.Format of questions will include a variety of styles suitable to the PC being tested such as multiple choice questions, fill in the blanks, situational judgment test, simulation and programming test.
- 4.To pass a QP, a trainee should pass each individual NOS. Standard passing criteria for each NOS is 70%.
- 5.For latest details on the assessment criteria, please visit www.sscnasscom.com.
- 6.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.

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
SSC/N0501. Contribute to the design of software products and applications	40	60	-	-	100	15
SSC/N4101. Conduct marketing research and analysis for products	25	75	-	-	100	15
SSC/N9001. Manage your work to meet requirements	25	75	-	-	100	14
SSC/N9002. Work effectively with colleagues	20	80	-	-	100	14
SSC/N9003. Maintain a healthy, safe and secure working environment	30	70	-	-	100	14
SSC/N9004. Provide data/information in standard formats	25	75	-	-	100	14
SSC/N9014. Maintain an inclusive, environmentally sustainable workplace	20	80	-	-	100	14
Total	185	515	-	-	700	100

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
IT-ITeS	Information Technology - Information Technology enabled Services
BPM	Business Process Management
BPO	Business Process Outsourcing
KPO	Knowledge Process Outsourcing
LPO	Legal Process Outsourcing
IPO	Information Process Outsourcing

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.
Helpdesk	Helpdesk is an entity to which the customers will report their IT problems. IT Service Helpdesk Attendant is responsible for managing the helpdesk.