

Qualification Pack



Automotive Manufacturing Data Analyst

QP Code: ASC/Q6416

Version: 1.0

NSQF Level: 6

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ASC/Q6416: Automotive Manufacturing Data Analyst

Brief Job Description

The individual at this job is responsible for performing production and maintenance data analysis by using edge computing devices, analytical and statistical tools and developing the end-to-end architecture for data flow for effective data extraction

Personal Attributes

The person should be result oriented with good technical and analytical skills, should have Excellent Interpersonal Skills, communication and presentation skills and a good team player. They should have ability to manage projects and prioritize work.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [ASC/N9810: Manage work and resources \(Manufacturing\)](#)
2. [ASC/N6452: Data Extraction and Collection from Industrial Robots, Automation systems, Machines & Other Manufacturing systems.](#)
3. [ASC/N6439: Data preparation and acquisition for analysis \(Manufacturing\)](#)
4. [ASC/N6440: Dashboarding of the Analysed Manufacturing data](#)
5. [DGT/VSQ/N0103: Employability Skills \(90 Hours\)](#)

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Production Engineering
Country	India
NSQF Level	6
Credits	21
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2151.0602

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Minimum Educational Qualification & Experience	Completed 3 year diploma after 10th (Mechanical/Automobile/ Electrical / Electronics) with 5 Years of experience in relevant field OR B.E./B.Tech with 1 Year of experience in relevant field OR Certificate-NSQF (Automotive Prototype Manufacturing Lead Technician/ Electric Vehicle Product Design Engineer Level 5) with 3 Years of experience in relevant field
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	22 Years
Last Reviewed On	NA
Next Review Date	05/01/2026
NSQC Approval Date	05/01/2023
Version	1.0
Reference code on NQR	QG-06-AU-00099-2023-V1-ASDC
NQR Version	1.1

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ASC/N9810: Manage work and resources (Manufacturing)

Description

This NOS unit is about implementing safety, planning work, adopting sustainable practices for optimising the use of resources.

Scope

The scope covers the following :

- Maintain safe and secure working environment
- Maintain Health and Hygiene
- Effective waste management practices
- Material/energy conservation practices

Elements and Performance Criteria

Maintain safe and secure working environment

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

- PC1.** identify hazardous activities and the possible causes of risks or accidents in the workplace
- PC2.** implement safe working practices for dealing with hazards to ensure safety of self and others
- PC3.** conduct regular checks of the machines with support of the maintenance team to identify potential hazards
- PC4.** ensure that all the tools/equipment/fasteners/spare parts are arranged as per specifications/utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/work instructions
- PC5.** organise safety drills or training sessions to create awareness amongst others on the identified risks and safety practices
- PC6.** fill daily check sheet to report improvements done and risks identified
- PC7.** ensure that relevant safety boards/signs are placed on the shop floor for the safety of self and others
- PC8.** report any identified breaches in health, safety and security policies and procedures to the designated person

Maintain Health and Hygiene

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

- PC9.** ensure workplace, equipment, restrooms etc. are sanitized regularly
- PC10.** ensure team is aware about hygiene and sanitation regulations and following them on the shop floor
- PC11.** ensure availability of running water, hand wash and alcohol-based sanitizers at the workplace
- PC12.** report advanced hygiene and sanitation issues to appropriate authority
- PC13.** follow stress and anxiety management techniques and support employees to cope with stress, anxiety etc
- PC14.** wear and dispose PPEs regularly and appropriately

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Effective waste management practices

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

PC15. ensure recyclable, non-recyclable and hazardous wastes are segregated as per SOP

PC16. ensure proper mechanism is followed while collecting and disposing of non-recyclable, recyclable and reusable waste

Material/energy conservation practices

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

PC17. ensure malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment are resolved effectively

PC18. prepare and analyze material and energy audit reports to decipher excessive consumption of material and water

PC19. identify possibilities of using renewable energy and environment friendly fuels

PC20. identify processes where material and energy/electricity utilization can be optimized

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. organisation procedures for health, safety and security, individual role and responsibilities in this context

KU2. the organisation's emergency procedures for different emergency situations and the importance of following the same

KU3. evacuation procedures for workers and visitors

KU4. how and when to report hazards as well as the limits of responsibility for dealing with hazards

KU5. potential hazards, risks and threats based on the nature of work

KU6. various types of fire extinguisher

KU7. various types of safety signs and their meaning

KU8. appropriate first aid treatment relevant to different condition e.g. bleeding, minor burns, eye injuries etc.

KU9. relevant standards, procedures and policies related to 5S followed in the company

KU10. the various materials used and their storage norms

KU11. importance of efficient utilisation of material and water

KU12. basics of electricity and prevalent energy efficient devices

KU13. common practices of conserving electricity

KU14. common sources and ways to minimize pollution

KU15. categorisation of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics

KU16. waste management techniques

KU17. significance of greening

Generic Skills (GS)

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

- GS1.** read safety instructions/guidelines
- GS2.** modify work practices to improve them
- GS3.** work with supervisors/team members to carry out work related tasks
- GS4.** complete tasks efficiently and accurately within stipulated time
- GS5.** inform/report to concerned person in case of any problem
- GS6.** make timely decisions for efficient utilization of resources
- GS7.** write reports such as accident report, in at least English/regional language

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Maintain safe and secure working environment</i>	20	13	-	8
PC1. identify hazardous activities and the possible causes of risks or accidents in the workplace	4	2	-	2
PC2. implement safe working practices for dealing with hazards to ensure safety of self and others	3	1	-	2
PC3. conduct regular checks of the machines with support of the maintenance team to identify potential hazards	2	2	-	1
PC4. ensure that all the tools/equipment/fasteners/spare parts are arranged as per specifications/utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/work instructions	3	2	-	1
PC5. organise safety drills or training sessions to create awareness amongst others on the identified risks and safety practices	2	-	-	-
PC6. fill daily check sheet to report improvements done and risks identified	2	2	-	-
PC7. ensure that relevant safety boards/signs are placed on the shop floor for the safety of self and others	2	2	-	1
PC8. report any identified breaches in health, safety and security policies and procedures to the designated person	2	2	-	1
<i>Maintain Health and Hygiene</i>	13	7	-	5
PC9. ensure workplace, equipment, restrooms etc. are sanitized regularly	3	2	-	1
PC10. ensure team is aware about hygiene and sanitation regulations and following them on the shop floor	2	1	-	-
PC11. ensure availability of running water, hand wash and alcohol-based sanitizers at the workplace	2	2	-	1

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. report advanced hygiene and sanitation issues to appropriate authority	1	1	-	1
PC13. follow stress and anxiety management techniques and support employees to cope with stress, anxiety etc	2	1	-	1
PC14. wear and dispose PPEs regularly and appropriately	3	-	-	1
<i>Effective waste management practices</i>	6	4	-	1
PC15. ensure recyclable, non-recyclable and hazardous wastes are segregated as per SOP	3	2	-	-
PC16. ensure proper mechanism is followed while collecting and disposing of non-recyclable, recyclable and reusable waste	3	2	-	1
<i>Material/energy conservation practices</i>	11	6	-	6
PC17. ensure malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment are resolved effectively	2	2	-	1
PC18. prepare and analyze material and energy audit reports to decipher excessive consumption of material and water	3	2	-	1
PC19. identify possibilities of using renewable energy and environment friendly fuels	3	1	-	2
PC20. identify processes where material and energy/electricity utilization can be optimized	3	1	-	2
NOS Total	50	30	-	20

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National Occupational Standards (NOS) Parameters

NOS Code	ASC/N9810
NOS Name	Manage work and resources (Manufacturing)
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	5
Credits	2
Version	2.0
Last Reviewed Date	03/05/2023
Next Review Date	03/05/2026
NSQC Clearance Date	03/05/2023

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ASC/N6452: Data Extraction and Collection from Industrial Robots, Automation systems, Machines & Other Manufacturing systems.

Description

This NOS unit is about performing tasks related to collection and extraction of data from various manufacturing entities for answering relevant business questions.

Scope

The scope covers the following :

- Assessing project requirements
- Designing of project outline and selection of various data attributes
- Selection of data integration platform to integrate the data from various department

Elements and Performance Criteria

Assessing project requirements

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

- PC1.** Evaluate the requirements of the business questions to be catered with either visualization platforms or analytics and predictive modelling solutions
- PC2.** Design data architecture for collection and extraction of data from various departments using connectors and platforms
- PC3.** Assess all organizational processes related to the use of data and analytics
- PC4.** Check that the existing setup is capable or not for data collection and analysis

Designing of project outline and selection of various data attributes

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

- PC5.** Prepare a layout of project execution where it should defend the choice of technology and its cost
- PC6.** Prepare the outline of the development process and its requirements for both material and resources under the guidance of manager
- PC7.** Define various data attributes and what level of analytics is required to analyse data and deliver value with the support of manager

Selection of data integration platform to integrate the data from various department

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

- PC8.** Identify suitable data integration tool according to the volume of data that need to be analysed
- PC9.**
 - Create an end-to-end data flow using ETL (Extract-Transform-Load) tool using different connectors for
 - different types of data sources
- PC10.** Create datawarehouse for data acquisition

Knowledge and Understanding (KU)

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The individual on the job needs to know and understand:

- KU1.** Organizational policies, procedures, and guidelines that relate to designing and maintaining databases
- KU2.** Organizational policies and procedures for sharing data
- KU3.** Organizational policies and procedures for documenting databases architectures and backup mechanisms
- KU4.** Who to involve while designing and developing the database architecture and pipelines for the solution
- KU5.** range of standard platforms and tools available and how to use them
- KU6.** database connectors and application connectors for application-cloud communications
- KU7.** updated internal and external cybersecurity regulations
- KU8.** impacts of network on the environment and human health
- KU9.** ETL tools like Talend, SQL Server Integration Services (SSIS), etc
- KU10.** Basics of SQ

Generic Skills (GS)

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

- GS1.** Follow instructions, guidelines, procedures, rules, and service level agreements
- GS2.** Listen effectively and communicate information accurately
- GS3.** Follow rule-based decision-making processes
- GS4.** Make decisions on suitable courses
- GS5.** Plan and organize the work to achieve targets and meet deadlines
- GS6.** Apply problem-solving approaches to different situations
- GS7.** Analyse the business impact and disseminate relevant information to others
- GS8.** Apply balanced judgments to different situations
- GS9.** Check the work is complete and free from errors

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assessing project requirements</i>	10	10	-	5
PC1. Evaluate the requirements of the business questions to be catered with either visualization platforms or analytics and predictive modelling solutions	-	-	-	-
PC2. Design data architecture for collection and extraction of data from various departments using connectors and platforms	-	-	-	-
PC3. Assess all organizational processes related to the use of data and analytics	-	-	-	-
PC4. Check that the existing setup is capable or not for data collection and analysis	-	-	-	-
<i>Designing of project outline and selection of various data attributes</i>	15	15	-	7
PC5. Prepare a layout of project execution where it should defend the choice of technology and its cost	-	-	-	-
PC6. Prepare the outline of the development process and its requirements for both material and resources under the guidance of manager	-	-	-	-
PC7. Define various data attributes and what level of analytics is required to analyse data and deliver value with the support of manager	-	-	-	-
<i>Selection of data integration platform to integrate the data from various department</i>	15	15	-	8
PC8. Identify suitable data integration tool according to the volume of data that need to be analysed	-	-	-	-
PC9. • Create an end-to-end data flow using ETL (Extract-Transform-Load) tool using different connectors for • different types of data sources	-	-	-	-
PC10. Create datawarehouse for data acquisition	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	40	40	-	20

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National Occupational Standards (NOS) Parameters

NOS Code	ASC/N6452
NOS Name	Data Extraction and Collection from Industrial Robots, Automation systems, Machines & Other Manufacturing systems.
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Production Engineering
NSQF Level	6
Credits	6
Version	1.0
Last Reviewed Date	05/01/2023
Next Review Date	05/01/2026
NSQC Clearance Date	05/01/2023

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ASC/N6439: Data preparation and acquisition for analysis (Manufacturing)

Description

This NOS unit is about performing Exploratory Data Analysis on the data extracted, deciding which data attributes are required for analytics and analysing the extracted attributes using excel/ open-source python libraires

Scope

The scope covers the following :

- Identify business goals for which data need to be analysed
- Prepare the data need to be analysed
- Support in statistical analysis on the selected attributes of data

Elements and Performance Criteria

Identify business goal for which data need to be analysed

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

- PC1.** Prepare a list of the business problems within the organization of user/individual
- PC2.** Obtain the business goals which can be achieved using available datasets from the manager
- PC3.** Identify the timeframe of which data is required to address for achieving the business goal

Prepare the data need to be analysed

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

- PC4.** Create metadata for the selected dataset by following SOP/WI
- PC5.** Clean the data to remove erroneous data from dataset like removing outliers, missing values. etc. by using appropriate tool
- PC6.** Convert and map the data from one raw format into another
- PC7.** Prepare the data in a way that makes it accessible for effective use further down the line

Support in statistical analysis on the selected attributes of data

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

- PC8.** Perform descriptive statistics like measures of central tendency (mean, median, mode), measures of variability (variance, standard deviation), and frequency distribution on the data under the guidance of manager
- PC9.** Perform inferential statistics like Hypothesis Testing, Regression Analysis. etc. on the data as per the instructions received
- PC10.** Prepare a list of highly correlated attributes and take approval from manager
- PC11.** Find correlation amongst the selected attributes of the data .and plot their heatmap

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

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- KU1.** Product portfolio of organization
- KU2.** Company manufacturing processes
- KU3.** Standard Operation Procedures (SOP) recommended by manufacturer for using equipment / machinery in use
- KU4.** Descriptive and Inferential statistics
- KU5.** Types of data wrangling and data cleaning methods
- KU6.** Suitable documentation of the organization for the metadata creation
- KU7.** Python open-source libraries like SciPy, Pandas, Matplotlib, SciKit-Learn, etc
- KU8.** Open-source web application that you can use to create and share documents that contain live code, equations, visualizations, and text like Jupyter Notebook, Jupyter Lab, etc
- KU9.** Python based platforms like Anaconda

Generic Skills (GS)

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

- GS1.** Communicate effectively at the workplace
- GS2.** Write observations and any work-related information in English/regional language
- GS3.** Recognize a workplace problem and take suitable action
- GS4.** Analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently
- GS5.** Complete the assigned tasks in a timely and efficient manner
- GS6.** Coordinate with the team for installing the new systems efficiently

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Identify business goal for which data need to be analysed</i>	10	10	-	5
PC1. Prepare a list of the business problems within the organization of user/individual	-	-	-	-
PC2. Obtain the business goals which can be achieved using available datasets from the manager	-	-	-	-
PC3. Identify the timeframe of which data is required to address for achieving the business goal	-	-	-	-
<i>Prepare the data need to be analysed</i>	15	15	-	7
PC4. Create metadata for the selected dataset by following SOP/WI	-	-	-	-
PC5. Clean the data to remove erroneous data from dataset like removing outliers, missing values. etc. by using appropriate tool	-	-	-	-
PC6. Convert and map the data from one raw format into another	-	-	-	-
PC7. Prepare the data in a way that makes it accessible for effective use further down the line	-	-	-	-
<i>Support in statistical analysis on the selected attributes of data</i>	15	15	-	8
PC8. Perform descriptive statistics like measures of central tendency (mean, median, mode), measures of variability (variance, standard deviation), and frequency distribution on the data under the guidance of manager	-	-	-	-
PC9. Perform inferential statistics like Hypothesis Testing, Regression Analysis. etc. on the data as per the instructions received	-	-	-	-
PC10. Prepare a list of highly correlated attributes and take approval from manager	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. Find correlation amongst the selected attributes of the data .and plot their heatmap	-	-	-	-
NOS Total	40	40	-	20

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National Occupational Standards (NOS) Parameters

NOS Code	ASC/N6439
NOS Name	Data preparation and acquisition for analysis (Manufacturing)
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Production Engineering
NSQF Level	6
Credits	6
Version	1.0
Last Reviewed Date	05/01/2023
Next Review Date	05/01/2026
NSQC Clearance Date	05/01/2023

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ASC/N6440: Dashboarding of the Analysed Manufacturing data

Description

This NOS unit is about creating different visualizations charts for the important attributes of the analysed data. This is also about selecting and using different tools to create and publish real time interactive dashboards for valuable insights which play important role in decision process making.

Scope

The scope covers the following :

- Select appropriate charts for different attributes of the dataset
- Create dashboards
- Deployment of dashboards in local server or on the cloud

Elements and Performance Criteria

Select appropriate charts for different attributes of the dataset

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

- PC1.** Segregate nominal and ordinal attributes in the dataset
- PC2.** Select appropriate charts for nominal and ordinal variables
- PC3.** Select appropriate visualization chart for time series data

Create dashboards

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

- PC4.** Integrate geographical map for relevant attributes in dashboards
- PC5.** Create dashboard on a sales and order data having time-stamp attributes using dashboarding tool
- PC6.** Create demand forecasting dashboard on a relevant dataset using dashboarding tool

Deployment of dashboards in local server or on the cloud

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

- PC7.** Upload the dashboards on the local server or cloud
- PC8.** Verify and validate the compatibility of dashboard on different devices
- PC9.** Create the alert system in real time dashboard as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Organizational policies, procedures, and guidelines that relate to designing and maintaining networks
- KU2.** Organizational policies and procedures for sharing data
- KU3.** Organizational policies and procedures for documenting network designs and fall-back mechanisms

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- KU4.** Different types of visualizations charts Bar Graph, Line Graph, Stacked Bar Graph, Pie Chart, Scatter Plot Chart, etc.
- KU5.** Different types and categories of data variables qualitative, quantitative, nominal, ordinal, discrete, continuous, etc.
- KU6.** Different types of visualizations tools like Microsoft PowerBI Desktop, Tableau Public
- KU7.** Local machine server architecture

Generic Skills (GS)

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

- GS1.** Follow instructions, guidelines, procedures, rules, and service level agreements
- GS2.** Listen effectively and communicate information accurately
- GS3.** Follow rule-based decision-making processes
- GS4.** Make decisions on suitable courses
- GS5.** Plan and organize the work to achieve targets and meet deadlines
- GS6.** Refer anomalies to the supervisor
- GS7.** Ask for clarification and advice from appropriate people
- GS8.** Analyse the business impact and disseminate relevant information to others
- GS9.** Apply balanced judgments to different situations
- GS10.** Check the work is complete and free from errors
- GS10.** Work independently and collaboratively

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Select appropriate charts for different attributes of the dataset</i>	10	10	-	5
PC1. Segregate nominal and ordinal attributes in the dataset	-	-	-	-
PC2. Select appropriate charts for nominal and ordinal variables	-	-	-	-
PC3. Select appropriate visualization chart for time series data	-	-	-	-
<i>Create dashboards</i>	15	15	-	7
PC4. Integrate geographical map for relevant attributes in dashboards	-	-	-	-
PC5. Create dashboard on a sales and order data having time-stamp attributes using dashboarding tool	-	-	-	-
PC6. Create demand forecasting dashboard on a relevant dataset using dashboarding tool	-	-	-	-
<i>Deployment of dashboards in local server or on the cloud</i>	15	15	-	8
PC7. Upload the dashboards on the local server or cloud	-	-	-	-
PC8. Verify and validate the compatibility of dashboard on different devices	-	-	-	-
PC9. Create the alert system in real time dashboard as per requirement	-	-	-	-
NOS Total	40	40	-	20

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National Occupational Standards (NOS) Parameters

NOS Code	ASC/N6440
NOS Name	Dashboarding of the Analysed Manufacturing data
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Production Engineering
NSQF Level	6
Credits	5
Version	1.0
Last Reviewed Date	05/01/2023
Next Review Date	05/01/2026
NSQC Clearance Date	05/01/2023

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

Description

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

Scope

The scope covers the following :

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

Elements and Performance Criteria

Introduction to Employability Skills

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

- PC1.** understand the significance of employability skills in meeting the current job market requirement and future of work
- PC2.** identify and explore learning and employability relevant portals
- PC3.** research about the different industries, job market trends, latest skills required and the available opportunities

Constitutional values - Citizenship

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

- PC4.** recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.
- PC5.** follow environmentally sustainable practices

Becoming a Professional in the 21st Century

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

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

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- PC7.** practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life
- PC8.** adopt a continuous learning mindset for personal and professional development

Basic English Skills

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

- PC9.** use basic English for everyday conversation in different contexts, in person and over the telephone
- PC10.** read and understand routine information, notes, instructions, mails, letters etc. written in English
- PC11.** write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

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

- PC12.** identify career goals based on the skills, interests, knowledge, and personal attributes
- PC13.** prepare a career development plan with short- and long-term goals

Communication Skills

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

- PC14.** follow verbal and non-verbal communication etiquette while communicating in professional and public settings
- PC15.** use active listening techniques for effective communication
- PC16.** communicate in writing using appropriate style and format based on formal or informal requirements
- PC17.** work collaboratively with others in a team

Diversity & Inclusion

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

- PC18.** communicate and behave appropriately with all genders and PwD
- PC19.** escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

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

- PC20.** identify and select reliable institutions for various financial products and services such as bank account, debit and credit cards, loans, insurance etc.
- PC21.** carry out offline and online financial transactions, safely and securely, using various methods and check the entries in the passbook
- PC22.** identify common components of salary and compute income, expenses, taxes, investments etc
- PC23.** identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

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

- PC24.** operate digital devices and use their features and applications securely and safely
- PC25.** carry out basic internet operations by connecting to the internet safely and securely, using the mobile data or other available networks through Bluetooth, Wi-Fi, etc.
- PC26.** display responsible online behaviour while using various social media platforms

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- PC27.** create a personal email account, send and process received messages as per requirement
- PC28.** carry out basic procedures in documents, spreadsheets and presentations using respective and appropriate applications
- PC29.** utilize virtual collaboration tools to work effectively

Entrepreneurship

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

- PC30.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- PC31.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- PC32.** identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

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

- PC33.** identify different types of customers and ways to communicate with them
- PC34.** identify and respond to customer requests and needs in a professional manner
- PC35.** use appropriate tools to collect customer feedback
- PC36.** follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

- PC37.** create a professional Curriculum vitae (Résumé)
- PC38.** search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively
- PC39.** apply to identified job openings using offline /online methods as per requirement
- PC40.** answer questions politely, with clarity and confidence, during recruitment and selection
- PC41.** identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** need for employability skills and different learning and employability related portals
- KU2.** various constitutional and personal values
- KU3.** different environmentally sustainable practices and their importance
- KU4.** Twenty first (21st) century skills and their importance
- KU5.** how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up
- KU6.** importance of career development and setting long- and short-term goals
- KU7.** about effective communication
- KU8.** POSH Act
- KU9.** Gender sensitivity and inclusivity
- KU10.** different types of financial institutes, products, and services

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- KU11.** components of salary and how to compute income and expenditure
- KU12.** importance of maintaining safety and security in offline and online financial transactions
- KU13.** different legal rights and laws
- KU14.** different types of digital devices and the procedure to operate them safely and securely
- KU15.** how to create and operate an e- mail account
- KU16.** use applications such as word processors, spreadsheets etc.
- KU17.** how to identify business opportunities
- KU18.** types and needs of customers
- KU19.** how to apply for a job and prepare for an interview
- KU20.** apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

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

- GS1.** read and write different types of documents/instructions/correspondence in English and other languages
- GS2.** communicate effectively using appropriate language in formal and informal settings
- GS3.** behave politely and appropriately with all to maintain effective work relationship
- GS4.** how to work in a virtual mode, using various technological platforms
- GS5.** perform calculations efficiently
- GS6.** solve problems effectively
- GS7.** pay attention to details
- GS8.** manage time efficiently
- GS9.** maintain hygiene and sanitization to avoid infection

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. understand the significance of employability skills in meeting the current job market requirement and future of work	-	-	-	-
PC2. identify and explore learning and employability relevant portals	-	-	-	-
PC3. research about the different industries, job market trends, latest skills required and the available opportunities	-	-	-	-
<i>Constitutional values - Citizenship</i>	1	1	-	-
PC4. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC5. follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
PC6. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC7. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
PC8. adopt a continuous learning mindset for personal and professional development	-	-	-	-
<i>Basic English Skills</i>	3	4	-	-
PC9. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-

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

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

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC34. identify and respond to customer requests and needs in a professional manner	-	-	-	-
PC35. use appropriate tools to collect customer feedback	-	-	-	-
PC36. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC37. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC38. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC39. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC40. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC41. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	20	30	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0103
NOS Name	Employability Skills (90 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	5
Credits	3
Version	1.0
Last Reviewed Date	03/05/2023
Next Review Date	03/05/2026
NSQC Clearance Date	03/05/2023

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 centre (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training centre 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

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(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
ASC/N9810.Manage work and resources (Manufacturing)	50	30	-	20	100	15
ASC/N6452.Data Extraction and Collection from Industrial Robots, Automation systems, Machines & Other Manufacturing systems.	40	40	0	20	100	25
ASC/N6439.Data preparation and acquisition for analysis (Manufacturing)	40	40	0	20	100	20
ASC/N6440.Dashboarding of the Analysed Manufacturing data	40	40	0	20	100	20
DGT/VSQ/N0103.Employability Skills (90 Hours)	20	30	-	-	50	20
Total	190	180	-	80	450	100

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Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

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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.