



Production Engineer

QP Code: CSC/Q1201

Version: 2.0

NSQF Level: 5

Capital Goods Skill Council || 1st Floor, L-29, Outer Circle, Connaught Place
New Delhi - 110001

Contents

CSC/Q1201: Production Engineer	3
<i>Brief Job Description</i>	3
<i>Personal Attributes</i>	3
<i>Applicable National Occupational Standards (NOS)</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
CSC/N1335: Follow the health and safety practices at work.....	5
CSC/N1336: Coordinate with co-workers to achieve work efficiency	10
CSC/N1201: Plan and manage the production process	13
<i>Assessment Guidelines</i>	18
<i>Assessment Weightage</i>	18
Acronyms	19
Glossary.....	20

CSC/Q1201: Production Engineer

Brief Job Description

A Production Engineer is responsible for supervising production processes such as machining, fabrication, welding, surface finishing, assembly, etc. The individual supervises the whole production cycle from planning, resource management, production to review of the production processes to ensure adherence to applicable standards, regulations and organisational guidelines. The person supervises and assist various personnel involved in the production activities for ensuring smooth operations at the production facility and achieving the productions targets.

Personal Attributes

The individual must be physically fit to work for long durations. The person must have an eye for detail with analytical and problem-solving skills. The individual must have excellent verbal and written communication skills with the ability to work in coordination with others to achieve the work objectives, and take independent decisions regarding the area of work.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [CSC/N1335: Follow the health and safety practices at work](#)
2. [CSC/N1336: Coordinate with co-workers to achieve work efficiency](#)
3. [CSC/N1201: Plan and manage the production process](#)

Qualification Pack (QP) Parameters

Sector	Capital Goods
Sub-Sector	Machine Tools, Dies, Moulds and Press Tools, Plastics Manufacturing Machinery, Textile Manufacturing Machinery
Occupation	Shop Floor Management
Country	India
NSQF Level	5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/NIL

Minimum Educational Qualification & Experience	<p>B.E/B.Tech (Mechanical)</p> <p>OR</p> <p>3 Year Diploma (Mechanical) in the relevant field with 2 years of experience in the relevant field</p> <p>OR</p> <p>10th + ITI (2 years) in the relevant field with 3 years of relevant experience in the relevant field</p> <p>OR</p> <p>12th Class Pass with 4 years of experience</p> <p>OR</p> <p>Certified in NSQF-L4 Materials - Engineer with 2 years of experience in the relevant field</p>
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	
Next Review Date	
Deactivation Date	
NSQC Approval Date	
Version	2.0
Reference code on NQR	2015/CCM/GCSC/00253
NQR Version	1.0

CSC/N1335: Follow the health and safety practices at work

Description

This OS unit is about following the appropriate health and safety practices at work. It covers responsibilities towards self and others to ensure a safe work environment.

Scope

This unit/task covers the following:

- Maintain personal health and safety
- Assist in hazard management
- Check the first aid box, firefighting and safety equipment
- Assist in waste management
- Follow the fire safety guidelines
- Follow the emergency and first-aid procedures
- Carry out relevant documentation and review

Elements and Performance Criteria

Maintain personal health and safety

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

- PC1.** follow the recommended practices to ensure protection from infections and transmission to others, such as the use of hand sanitiser and face mask
- PC2.** check the work conditions, assess the potential health and safety risks, and take appropriate measures to mitigate them
- PC3.** select and use the appropriate Personal Protective Equipment (PPE) relevant to the task and work conditions
- PC4.** follow the recommended techniques while lifting and moving heavy objects to avoid injury
- PC5.** follow the manufacturer's instructions and workplace safety guidelines while working on heavy machinery, tools and equipment

Assist in hazard management

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

- PC6.** identify existing and potential hazards at work
- PC7.** assess the potential risks and injuries associated with the identified hazards
- PC8.** coordinate with the supervisor or other relevant personnel to prevent or minimise the identified hazards
- PC9.** handle hazardous materials safely and store them in the designated storage

Check the first aid box, firefighting and safety equipment

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

- PC10.** check the first aid box to ensure it is updated with the relevant first aid supplies
- PC11.** check and test the firefighting and various safety equipment to ensure they are in usable condition
- PC12.** coordinate with the supervisor for the repair and replacement of firefighting and safety equipment

Assist in waste management

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

- PC13.** segregate waste into appropriate categories
- PC14.** recycle the recyclable waste appropriately
- PC15.** dispose of the non-recyclable waste in an environment-friendly manner, complying with the applicable regulations

Follow the fire safety guidelines

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

- PC16.** use the appropriate type of fire extinguisher to extinguish different types of fires safely
- PC17.** follow the recommended practices for a safe rescue during a fire emergency
- PC18.** coordinate with the fire department to request assistance to extinguish a serious fire

Follow the emergency and first-aid procedures

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

- PC19.** follow the organisational health and safety guidelines during workplace emergencies to ensure own and co-workers' safety
- PC20.** follow the recommended practices to minimise loss to organisational property during an emergency
- PC21.** follow the recommended procedure to free a person from electrocution
- PC22.** administer appropriate first aid to the injured personnel
- PC23.** perform Cardiopulmonary Resuscitation (CPR) on a potential victim of cardiac arrest
- PC24.** coordinate with the emergency services to request medical assistance for seriously injured/ ill personnel requiring professional medical attention or hospitalisation

Carry out relevant documentation and review

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

- PC25.** carry out appropriate documentation following a health and safety incident at work, including all the required information
- PC26.** coordinate with the relevant personnel to review health and safety conditions at work regularly or following an incident
- PC27.** assist in implementing appropriate changes to improve the health and safety conditions at work

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the recommended practices to be followed to ensure protection from infections and transmission to others, such as the use of hand sanitiser and face mask
- KU2.** the importance and process of checking the work conditions, assessing the potential health and safety risks, and take appropriate measures to mitigate them
- KU3.** the importance and process of selecting and using the appropriate PPE relevant to the task and work conditions
- KU4.** the recommended techniques to be followed while lifting and moving heavy objects to avoid injury
- KU5.** the importance of following the manufacturer's instructions and workplace safety guidelines while working on heavy machinery, tools and equipment
- KU6.** the importance and process of identifying existing and potential hazards at work
- KU7.** the process of assessing the potential risks and injuries associated with the various hazards

- KU8.** how to prevent or minimise different types of hazards
- KU9.** how to handle and store hazardous materials safely
- KU10.** the importance of ensuring the first aid box is updated with the relevant first aid supplies
- KU11.** the process of checking and testing the firefighting and various safety equipment to ensure they are in a usable condition
- KU12.** the criteria for segregating waste into appropriate categories
- KU13.** the appropriate methods for recycling the recyclable waste
- KU14.** the process of disposing of the non-recyclable waste safely and the applicable regulations
- KU15.** use of different types of fire extinguishers to extinguish different types of fires
- KU16.** the recommended practices to be followed for a safe rescue during a fire emergency
- KU17.** how to request assistance from the fire department to extinguish a serious fire
- KU18.** the appropriate practices to be followed during workplace emergencies to ensure safety and minimise loss to organisational property
- KU19.** common health and safety hazards present in a work environment, associated risks, and how to mitigate them
- KU20.** safe working practices to be followed while working at various hazardous sites and using electrical equipment
- KU21.** the importance of ensuring easy access to firefighting and safety equipment
- KU22.** the appropriate preventative and remedial actions to be taken in the case of exposure to toxic materials, such as poisonous chemicals and gases
- KU23.** various causes of fire in different work environments and the recommended precautions to be taken to prevent fire accidents
- KU24.** different methods of extinguishing fire
- KU25.** different materials used for extinguishing fire, such as sand, water, foam, CO₂, dry powder, etc.
- KU26.** the applicable rescue techniques to be followed during a fire emergency
- KU27.** the importance of placing safety signs and instructions at strategic locations in a workplace and following them
- KU28.** different types of first aid treatment to be provided for different types of injuries
- KU29.** potential injuries associated with incorrect manual handling
- KU30.** how to move an injured person safely
- KU31.** various hazards associated with the use of various machinery, tools, implements, equipment and materials
- KU32.** the importance of ensuring no obstruction and free access to fire exits
- KU33.** how to free a person from electrocution safely
- KU34.** how to administer appropriate first aid to an injured person
- KU35.** how to perform Cardiopulmonary Resuscitation (CPR)
- KU36.** the importance of coordinating with the emergency services to request urgent medical assistance for persons requiring professional medical attention or hospitalisation
- KU37.** the appropriate documentation to be carried out following a health and safety incident at work, and the relevant information to be included
- KU38.** the importance and process of reviewing the health and safety conditions at work regularly or following an incident
- KU39.** the importance and process of implementing appropriate changes to improve the health and safety conditions at work

Generic Skills (GS)

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

- GS1.** maintain work-related notes and records
- GS2.** communicate clearly and politely with co-workers and clients
- GS3.** read the relevant literature to get the latest updates about the field of work
- GS4.** listen attentively to understand the information being shared
- GS5.** plan and prioritise tasks to ensure timely completion
- GS6.** take quick decisions to deal with workplace emergencies and accidents
- GS7.** identify possible disruptions to work and take appropriate preventive measures
- GS8.** coordinate with the co-workers to achieve the work objectives
- GS9.** evaluate all possible solutions to a problem to select the best one

National Occupational Standards (NOS) Parameters

NOS Code	CSC/N1335
NOS Name	Follow the health and safety practices at the work
Sector	Capital Goods
Sub-Sector	Machine Tools, Process Plant Machinery, Dies, Moulds and Press Tools, Electrical and Power Machinery, Plastics Manufacturing Machinery, Light Engineering Goods, Textile Manufacturing Machinery
Occupation	Machining
NSQF Level	3
Credits	TBD
Version	2.0
Last Reviewed Date	
Next Review Date	
Deactivation Date	
NSQC Clearance Date	

CSC/N1336: Coordinate with co-workers to achieve work efficiency

Description

This OS unit is about working in coordination with co-workers to achieve the work objectives efficiently. It also covers practising inclusion at work.

Scope

This unit/task covers the following:

- Work effectively with co-workers
- Communicate effectively with co-workers
- Practice inclusion at work

Elements and Performance Criteria

Work effectively with co-workers

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

- PC1.** plan daily tasks at work to ensure their timely completion and efficient use of time
- PC2.** carry out work responsibilities adhering to the limits of authority
- PC3.** follow the supervisor's instructions to ensure adherence to the applicable quality standards and timescales
- PC4.** coordinate with the co-workers to achieve the work objectives efficiently
- PC5.** prepare the relevant documents and reports as per the supervisor's instructions, providing appropriate information clearly and systematically
- PC6.** coordinate with the supervisor or relevant personnel to deal with out of authority tasks and concerns
- PC7.** mentor and assist subordinates in the execution of their work responsibilities
- PC8.** identify possible disruptions to work through coordination with the relevant stakeholders and take appropriate preventive measures
- PC9.** use various resources efficiently to ensure maximum utilisation and minimum wastage
- PC10.** follow the recommended practices to avoid and resolve conflicts at work
- PC11.** follow the relevant organisational policies to ensure disciplined behaviour with maximum productivity at work

Communicate effectively with co-workers

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

- PC12.** follow the organisational policy for the efficient and timely dissemination of information to the authorised personnel
- PC13.** communicate clearly and politely to ensure effective communication with co-workers
- PC14.** follow the appropriate techniques for active listening during interactions

Practice inclusion at work

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

- PC15.** empathise with Persons with Disabilities (PwD)
- PC16.** adopt gender-neutral behaviour at work

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the importance and process of effective communication in the workplace
- KU2.** the barriers to effective communication and how to overcome them
- KU3.** the importance of teamwork in an organisation's and individual's success
- KU4.** the importance of active listening in the work environment
- KU5.** the appropriate techniques to be followed for active listening
- KU6.** importance of tone and pitch in effective communication
- KU7.** importance of avoiding casual expletives and unpleasant terms while communicating professional circles
- KU8.** the importance of maintaining discipline and ethical behaviour at work
- KU9.** the common reasons for interpersonal conflict and how to resolve them
- KU10.** the importance of developing effective working relationships for professional success
- KU11.** how expressing and addressing grievances appropriately and effectively
- KU12.** the importance and process of planning daily tasks to ensure their timely completion and efficient use of time
- KU13.** the importance of adhering to the limits of authority at work
- KU14.** the importance of following the applicable quality standards and timescales at work
- KU15.** the importance of coordinating with the co-workers to achieve the work objectives efficiently
- KU16.** the relevant documentation requirements
- KU17.** the importance of providing appropriate information clearly and systematically in work documents
- KU18.** the escalation matrix to be followed to deal with out of authority tasks and concerns
- KU19.** the importance and process of mentoring and assisting subordinates in the execution of their work responsibilities
- KU20.** how to identify possible disruptions to work prevent them
- KU21.** how to use various resources efficiently to ensure maximum utilisation and minimum wastage
- KU22.** the recommended practices to be followed at work to avoid and resolve conflicts at work
- KU23.** the importance and process of efficient and timely dissemination of information to the authorised personnel
- KU24.** how to communicate clearly and politely to ensure effective communication
- KU25.** the importance of following the recommended practices to ensure an inclusive environment for PwD and all genders at work

Generic Skills (GS)

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

- GS1.** maintain work-related notes and records
- GS2.** read work-related and other relevant literature
- GS3.** communicate politely and -professionally
- GS4.** listen attentively to understand the information or instructions being shared
- GS5.** plan and prioritise tasks to ensure timely completion
- GS6.** take prompt decisions to deal with workplace emergencies and accidents
- GS7.** evaluate all possible solutions to a problem to select the best one

National Occupational Standards (NOS) Parameters

NOS Code	CSC/N1336
NOS Name	Coordinate with co-workers to achieve work efficiency
Sector	Capital Goods
Sub-Sector	Machine Tools, Dies, Moulds and Press Tools, Plastics Manufacturing Machinery, Textile Manufacturing Machinery, Process Plant Machinery, Electrical and Power Machinery, Light Engineering Goods
Occupation	Machining
NSQF Level	3
Credits	TBD
Version	2.0
Last Reviewed Date	
Next Review Date	
Deactivation Date	
NSQC Clearance Date	

CSC/N1201: Plan and manage the production process

Description

This OS unit is about planning and managing the production process to ensure production as per the agreed quality parameters while ensuring compliance with the applicable regulations and organisational policies.

Scope

This unit/task covers the following:

- Plan and prepare for production
- Manage the production process
- Carry out documentation and data review
- Assist in improving production and productivity
- Use resources optimally

Elements and Performance Criteria

Plan and prepare for production

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

- PC1.** determine the production requirements through coordination with the relevant stakeholders
- PC2.** review the critical production requirements and quality criteria for each production and assembly activity
- PC3.** arrange for appropriate changes to be made to suit the operational requirements through coordination with the relevant stakeholders
- PC4.** estimate the production costs and prepare the budget for cost-effective production
- PC5.** negotiate with the client and other stakeholders to agree on the budgets
- PC6.** select the appropriate production methods, ensuring compliance with the applicable regulations and guidelines
- PC7.** select and arrange the resources required for production, such as raw materials, machinery, tools and equipment, ensuring the stock level of inputs is maintained according to the demand throughout the production process
- PC8.** plan and prepare the production schedule, sequencing various production processes to be completed as per the agreed timescales
- PC9.** select the production team personnel/ workers in the required number for efficient and timely production
- PC10.** supervise the process of preparation of the relevant raw materials, machinery, tools and equipment for safe operation
- PC11.** arrange for the repair/ replacement of the faulty/ damaged raw material, machinery, tools and equipment
- PC12.** prepare the job cards, allocating tasks with clear instructions to the production personnel/ workers according to their skills
- PC13.** assist the production personnel with any doubts they may have regarding the production processes and their responsibilities
- PC14.** coordinate with the relevant personnel to get approval for the job cards and production schedules
- PC15.** allocate resources and consumables for various production processes
- PC16.** supervise the process of preparation of production facility for production, ensuring all the existing and potential hazards are identified and addressed appropriately
- PC17.** maintain appropriate records with respect to production planning and preparation

Manage the production process

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

- PC18.** implement the approved production processes, ensuring compliance with the client's requirements along with applicable regulations, standards and organisational guidelines
- PC19.** adopt automation in production processes for enhanced production and quality of output
- PC20.** supervise the workers and arrange appropriate assistance to enable them to perform their duties effectively
- PC21.** monitor the production processes and adjust the schedules, as required
- PC22.** ensure that all support and control systems such as material supply, logistics, quality assurance systems operate effectively
- PC23.** liaise with the suppliers, managers and clients to ensure smooth production
- PC24.** identify problems in the production line and ensure their quick resolution with minimum impact on production, such as repair or replacement of the faulty/ damaged machinery, tools and equipment
- PC25.** ensure optimum usage of various resources to maintain the productions costs within budget
- PC26.** instruct the production personnel/ workers to connect the electrical tools and equipment safely, and turn them off when they are not in use
- PC27.** ensure orders are completed on time and as per the set budget, ensuring the applicable quality standards are met
- PC28.** ensure compliance with the environmental, health, safety guidelines and organisational policies through coordination with the relevant stakeholders
- PC29.** monitor production to ensure quality and adherence to the applicable budget and timescales
- PC30.** identify potential production problems and deviations and take appropriate action to prevent and rectify them as per the organisational policies
- PC31.** arrange for regular repair and maintenance of the machinery, tools and equipment to ensure their optimum performance without any breakdowns
- PC32.** monitor the quality of product/output to ensure adherence to the applicable quality standards, and implement the appropriate quality control programs, as required
- PC33.** ensure the applicable productivity targets are met
- PC34.** ensure the work area is maintained in a clean and hygienic condition

Carry out documentation and data review

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

- PC35.** collect the appropriate data, and prepare the relevant reports with respect to the production and productivity of the personnel involved
- PC36.** analyse and review the data through coordination with the relevant stakeholders to assess production
- PC37.** evaluate the effectiveness of the production processes to identify the scope of improvement/ streamlining, and provide relevant recommendations to the stakeholders
- PC38.** review the performance of production personnel/ workers against the relevant performance indicators

Assist in improving production and productivity

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

- PC39.** liaise with the relevant stakeholders to develop plans to improve production, reduce costs and labour requirements
- PC40.** use the relevant Industry 4.0 manufacturing technologies to ensure interconnectivity, automation, machine learning, and real-time data collection and analysis
- PC41.** coordinate with the relevant stakeholders for the implementation of agreed improvements
- PC42.** arrange appropriate training for the production personnel/ workers, as required
- PC43.** assist in developing health and safety procedures and protocols for ensuring the well-being of

workers, and reducing the organisation's carbon footprint

Use resources optimally

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

PC44. optimise the usage of electricity and other resources in various tasks and processes

PC45. connect the electrical tools and equipment safely, and turn them off when not in use

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** applicable documentation requirements in the job role
- KU2.** the relevant regulatory requirements with respect to production activities
- KU3.** the concepts and benefits of Industry 4.0 and Industrial Internet of Things (IIoT)
- KU4.** the process of determining the production requirements through coordination with the relevant personnel
- KU5.** how to review the critical production requirements and quality criteria for each production and assembly activity
- KU6.** the appropriate changes that may be required in the production requirements according to the operational requirements
- KU7.** how to estimate the production costs and prepare the budget
- KU8.** the process of negotiating with the client and other stakeholders to agree on the budgets
- KU9.** the process of selecting an appropriate production method and the relevant regulations and guidelines to be adhered to
- KU10.** various resources required for production, such as raw materials, machinery, tools and equipment
- KU11.** the importance of ensuring the stock level of inputs is maintained according to the demand throughout the production process
- KU12.** how to plan and prepare the production schedule, and the importance of sequencing various production processes appropriately to ensure their completion as per the agreed timescales
- KU13.** the process of selecting the production team personnel/ workers in an appropriate number for efficient and timely production
- KU14.** the process of preparing the relevant raw materials, machinery, tools and equipment for safe operations
- KU15.** the importance of arranging the repair/ replacement of the faulty/ damaged raw material, machinery, tools and equipment
- KU16.** the process of preparing the job cards to allocate tasks to the production personnel/ workers according to their skills
- KU17.** the importance of assisting the production personnel with any doubts they may have regarding the production processes and their responsibilities
- KU18.** the process of getting approval for the job cards and production schedules
- KU19.** the process of allocating resources and consumables for various production processes
- KU20.** the process of site preparation for production
- KU21.** how to identify and address all the existing and potential hazards at the production facility
- KU22.** the relevant records to be maintained with respect to production planning and preparation
- KU23.** the importance and process of implementing the approved production processes to ensure compliance with the client's requirements along with applicable regulations, standards and organisational guidelines
- KU24.** the importance of adopting automation in production processes for enhanced production and quality of output

- KU25.** the importance of arranging appropriate assistance to enable workers to perform their duties effectively
- KU26.** the process of monitoring the production processes and adjusting the schedules
- KU27.** the importance of ensuring that all support and control systems operate effectively during production
- KU28.** the importance of identifying problems in the production line and ensuring their quick resolution with minimum impact on production
- KU29.** how to ensure optimum usage of various resources to maintain the productions costs within budget
- KU30.** the importance of ensuring production orders are completed on time and as per the set budget, ensuring adherence to the applicable quality standards
- KU31.** how to ensure compliance with the relevant environmental, health, safety guidelines, such as the use of PPE and effective waste management
- KU32.** the importance of ensuring regular repair and maintenance of the machinery, tools and equipment for their optimum performance without any breakdowns
- KU33.** the importance and process of monitoring the quality of product/output to ensure adherence to the applicable quality standards
- KU34.** the importance of maintaining cleanliness and hygiene in the work area
- KU35.** the process of collecting the appropriate data, and preparing the relevant reports with respect to the production and productivity of the production personnel
- KU36.** the importance of analysing and reviewing the production data through coordination with the relevant stakeholders
- KU37.** how to evaluate the effectiveness of the production processes to identify the scope of improvement/ streamlining
- KU38.** the process of reviewing the performance of production personnel/ workers against the relevant performance indicators
- KU39.** the process of developing plans to improve production, reduce costs and labour requirements according to reviews with the relevant stakeholders
- KU40.** the importance of arranging appropriate training for the production personnel/ workers to improve their skills and productivity
- KU41.** the process of assisting in developing health and safety procedures and protocols for ensuring the well-being of workers
- KU42.** how to reduce an organisation's carbon footprint
- KU43.** the benefits and methods of resource optimisation

Generic Skills (GS)

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

- GS1.** maintain work-related notes and records
- GS2.** undertake work-related numerical computations
- GS3.** use the appropriate units of measurement and measuring techniques
- GS4.** read the relevant literature to learn about the latest developments in the field of work
- GS5.** listen attentively to understand the information or instructions being shared
- GS6.** communicate politely and professionally
- GS7.** plan and prioritise tasks to ensure timely completion
- GS8.** coordinate with co-workers to achieve the work objectives
- GS9.** evaluate all possible solutions to a problem to select the best one
- GS10.** take prompt decisions to deal with workplace emergencies and accidents

National Occupational Standards (NOS) Parameters

NOS Code	CSC/N1201
NOS Name	Plan and manage the production process
Sector	Capital Goods
Sub-Sector	Machine Tools, Dies, Moulds and Press Tools, Plastics Manufacturing Machinery, Textile Manufacturing Machinery
Occupation	Shop Floor Management
NSQF Level	5
Credits	TBD
Version	2.0
Last Reviewed Date	
Next Review Date	
Deactivation Date	
NSQC Clearance Date	

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for the Qualification Pack will be created by CGSC.
2. Performance Criteria (PC) have been assigned marks proportional to their importance in NOS. SSC will also lay down the proportion of marks for Theory and Skills Practical for each PC.
3. The assessment for the theory part will/may be based on a knowledge bank of questions approved by CGSC.
4. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
5. Assessment Agencies will create Assessor Guides comprising of Theory and Practical Assessment Set and Guidelines for each examination/training centre (as per assessment criteria below). The same will be approved by CGSC for adequacy.
6. To successfully attain Certification on the Qualification Pack, the trainee must score a minimum of 70% in each Core NOS and a minimum of 50% in all non-core NOS. In addition, a candidate needs to attain a minimum overall pass percentage of 70% for certification.
7. In case of unsuccessful completion, the trainee may seek reassessment on 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
Total						

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
CNC	Computer Numerically Controlled
CAD	Computer Aided Design
2D	2 Dimensional
3D	3 Dimensional
CO2	Carbon Dioxide
CPR	Cardiac Pulmonary Resuscitation
ISO	International Organization For Standardization
PPE	Personal Protective Equipment
CD	Compact Disc
DVD	Digital Video Disc Or Digital Versatile Disc

Glossary

Sector	The 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 a similar/ related set of functions in the 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 that 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 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.