



# Automotive Tool Room Technician

QP Code: ASC/Q4101

Version: 3.0

NSQF Level: 3.5

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## ASC/Q4101: Automotive Tool Room Technician

### Brief Job Description

The individual at this job performs various machining and assembling activities to manufacture tool and die as per the work requirements.

### Personal Attributes

The person should be patient, organised, team-oriented and have the ability to work for long hours in adverse conditions. They should be keen observers and have an eye for detail and quality.

### Applicable National Occupational Standards (NOS)

#### Compulsory NOS:

1. [ASC/N9803: Organize work and resources \(Manufacturing\)](#)
2. [ASC/N4101: Prepare for tool and die manufacturing operations](#)
3. [ASC/N4102: Perform tool and die manufacturing operations](#)
4. [DGT/VSQ/N0102: Employability Skills \(60 Hours\)](#)

### Qualification Pack (QP) Parameters

<b>Sector</b>	Automotive
<b>Sub-Sector</b>	Manufacturing
<b>Occupation</b>	Tool Room Operation
<b>Country</b>	India
<b>NSQF Level</b>	3.5
<b>Credits</b>	0
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/7223.0200

<b>Minimum Educational Qualification &amp; Experience</b>	8th grade pass with 2 years of NTC with 1 Year of experience OR 8th Class with 3 Years of experience OR 10th grade pass and pursuing continuous schooling OR 11th Class
<b>Minimum Level of Education for Training in School</b>	
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	NA
<b>Next Review Date</b>	NA
<b>NSQC Approval Date</b>	
<b>Version</b>	3.0

## ASC/N9803: Organize work and resources (Manufacturing)

### Description

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

### Scope

The scope covers the following :

- Maintain safe and secure working environment
- Health and hygiene
- Perform work as per quality standards
- 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.** follow safe working practices while dealing with hazards to ensure safety of self and others
- PC3.** carry out routine check of the machine for identifying potential hazards
- PC4.** use appropriate protective clothing/equipment for specific tasks and work
- PC5.** follow safety hazards and preventive techniques during fire drill
- PC6.** report any identified breaches in health, safety and security policies and procedures to the designated person

#### *Health and hygiene*

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

- PC7.** ensure workstation and equipment are regularly clean and sanitized
- PC8.** clean hands with soap, alcohol-based sanitizer regularly
- PC9.** avoid contact with ill people and self-isolate in a similar situation
- PC10.** wear and dispose PPEs regularly and appropriately
- PC11.** report advanced hygiene and sanitation issues to appropriate authority
- PC12.** follow stress and anxiety management techniques

#### *Perform work as per quality standards*

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

- PC13.** ensure that work is accomplished as per the requirements within the specified timeline
- PC14.** ensure team goals are given preference over individual goals

#### *Effective waste management practices*

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

- PC15.** follow the fundamentals of 5S for waste management
- PC16.** segregate waste into different categories

- PC17.** follow processes specified for disposal of hazardous waste
- PC18.** identify recyclable, non-recyclable and hazardous waste
- PC19.** dispose non-recyclable, recyclable and reusable waste appropriately at identified location

*Material/energy conservation practices*

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

- PC20.** identify ways to optimize usage of material in various tasks/activities/processes
- PC21.** check for spills/leakages in various tasks/activities/processes
- PC22.** plug spills/leakages and escalate to appropriate authority if unable to rectify
- PC23.** check if the equipment/machine is functioning normally before commencing work and rectify wherever required
- PC24.** report malfunctioning (fumes/ sparks/emission/vibration/noise) and lapse in maintenance of equipment
- PC25.** ensure electrical equipment and appliances are properly connected and turned off when not in use

## **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.** preventative and remedial actions to be taken in case of exposure to toxic material
- KU7.** various types of fire extinguisher
- KU8.** various types of safety signs and their meaning
- KU9.** appropriate first aid treatment relevant to different condition e.g. bleeding, minor burns, eye injuries etc.
- KU10.** relevant standards, procedures and policies related to 5S followed in the company
- KU11.** the various materials used and their storage norms
- KU12.** efficient utilisation of material and water
- KU13.** basics of electricity and prevalent energy efficient devices
- KU14.** common practices of conserving electricity
- KU15.** common sources and ways to minimize pollution
- KU16.** categorisation of waste into dry, wet, recyclable, non-recyclable and items of single-use plastics
- KU17.** usage of different colors of dustbins
- KU18.** waste management techniques
- KU19.** significance of greening

## **Generic Skills (GS)**

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

- GS1.** read safety instructions/guidelines
- GS2.** modify work practices to improve them
- GS3.** ask for clarifications from superior about the job requirement
- GS4.** work with supervisors/team members to carry out work related tasks
- GS5.** complete tasks efficiently and accurately within stipulated time
- GS6.** inform/report to concerned person in case of any problem
- GS7.** make timely decisions for efficient utilization of resources
- GS8.** write reports such as accident report, in at least English/regional language
- GS9.** be punctual and utilize time efficiently

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Maintain safe and secure working environment</i>	<b>11</b>	<b>5</b>	-	<b>7</b>
<b>PC1.</b> identify hazardous activities and the possible causes of risks or accidents in the workplace	2	1	-	2
<b>PC2.</b> follow safe working practices while dealing with hazards to ensure safety of self and others	2	-	-	1
<b>PC3.</b> carry out routine check of the machine for identifying potential hazards	2	1	-	1
<b>PC4.</b> use appropriate protective clothing/equipment for specific tasks and work	2	1	-	1
<b>PC5.</b> follow safety hazards and preventive techniques during fire drill	2	1	-	1
<b>PC6.</b> report any identified breaches in health, safety and security policies and procedures to the designated person	1	1	-	1
<i>Health and hygiene</i>	<b>7</b>	<b>5</b>	-	<b>2</b>
<b>PC7.</b> ensure workstation and equipment are regularly clean and sanitized	2	2	-	1
<b>PC8.</b> clean hands with soap, alcohol-based sanitizer regularly	1	1	-	1
<b>PC9.</b> avoid contact with ill people and self-isolate in a similar situation	1	-	-	-
<b>PC10.</b> wear and dispose PPEs regularly and appropriately	1	-	-	-
<b>PC11.</b> report advanced hygiene and sanitation issues to appropriate authority	1	1	-	-
<b>PC12.</b> follow stress and anxiety management techniques	1	1	-	-
<i>Perform work as per quality standards</i>	<b>5</b>	<b>3</b>	-	<b>2</b>
<b>PC13.</b> ensure that work is accomplished as per the requirements within the specified timeline	2	2	-	1



Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC14.</b> ensure team goals are given preference over individual goals	3	1	-	1
<i>Effective waste management practices</i>	<b>15</b>	<b>10</b>	-	<b>4</b>
<b>PC15.</b> follow the fundamentals of 5S for waste management	3	2	-	1
<b>PC16.</b> segregate waste into different categories	2	1	-	-
<b>PC17.</b> follow processes specified for disposal of hazardous waste	2	2	-	1
<b>PC18.</b> identify recyclable, non-recyclable and hazardous waste	4	2	-	1
<b>PC19.</b> dispose non-recyclable, recyclable and reusable waste appropriately at identified location	4	3	-	1
<i>Material/energy conservation practices</i>	<b>12</b>	<b>7</b>	-	<b>5</b>
<b>PC20.</b> identify ways to optimize usage of material in various tasks/activities/processes	2	1	-	1
<b>PC21.</b> check for spills/leakages in various tasks/activities/processes	2	1	-	1
<b>PC22.</b> plug spills/leakages and escalate to appropriate authority if unable to rectify	2	1	-	-
<b>PC23.</b> check if the equipment/machine is functioning normally before commencing work and rectify wherever required	2	2	-	1
<b>PC24.</b> report malfunctioning (fumes/sparks/emission/vibration/noise) and lapse in maintenance of equipment	2	1	-	1
<b>PC25.</b> ensure electrical equipment and appliances are properly connected and turned off when not in use	2	1	-	1
<b>NOS Total</b>	<b>50</b>	<b>30</b>	-	<b>20</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ASC/N9803
<b>NOS Name</b>	Organize work and resources (Manufacturing)
<b>Sector</b>	Automotive
<b>Sub-Sector</b>	Generic
<b>Occupation</b>	Generic
<b>NSQF Level</b>	3
<b>Credits</b>	TBD
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	31/03/2022
<b>Next Review Date</b>	24/06/2026
<b>NSQC Clearance Date</b>	24/06/2021

## **ASC/N4101: Prepare for tool and die manufacturing operations**

### **Description**

This NOS is about preparing for tool and die manufacturing operations as per the given work order and the standards specified by the organization.

### **Scope**

The scope covers the following :

- Identify work requirements
- Prepare for machining and assembling operations

### **Elements and Performance Criteria**

#### *Identify work requirements*

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

- PC1.** identify the work to be done by interpreting the engineering drawings/work order/SOPs and instructions from supervisor
- PC2.** select the appropriate assembling and machining operations on the basis of drawing/work order information
- PC3.** identify the tools, equipment, machine and input materials required for the job

#### *Prepare for assembling and machining operations*

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

- PC4.** select and arrange the right material (metal blocks), tools, equipment, machines and consumables as per the SOP and job requirements
- PC5.** plan sequence of assembling and machining operations for fabricating tools, dies or assemblies on the basis of drawing/work order
- PC6.** use appropriate Personal Protective Equipment (PPE) for safe working in toolroom
- PC7.** check the input material, tools, equipment and machines for any defects and that they are as per the required quality standards
- PC8.** check and calibrate the tools and equipment before use
- PC9.** ensure that the helper/ assistant operator cleans the surface of machines and equipment and they are free from dust and any other impurities like grease, oil, paint etc.
- PC10.** set the assembling and machining equipment and their parameters as per the job requirements and SOP

### **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

- KU1.** relevant standards and procedures followed in the company
- KU2.** basic process followed for tool and die manufacturing
- KU3.** how to read engineering drawings, sketches, work orders
- KU4.** Geometric Dimension and Tolerance limits

- KU5.** various types of machining processes such as drilling, boring, turning etc
- KU6.** various assembly operations and methods like bolting, torqueing, tightening, fitting, greasing, hammering, sealing, clamping etc.
- KU7.** the impact of various machining parameters on the final product
- KU8.** SOP recommended by the organisation for operating CNC and conventional machine
- KU9.** SOP recommended by the organisation for operating CNC and conventional machine
- KU10.** SOP recommended by the manufacturer for using tools and machines like grinders, lather machines, CNC operator wire cut and EDM machines and tools like Bolting guns, rivet guns, nuts, bolts, screw drivers, wrenches, hacksaws, hammers etc. required during tool and die manufacturing operations
- KU11.** impact of various assembly process like bolting, torqueing, tightening, fitting, greasing, hammering, sealing, clamping on the final product
- KU12.** how to select material to be used based on properties like hardness and tolerance for forming the tool
- KU13.** safety requirements during the tool and die manufacturing work

## **Generic Skills (GS)**

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

- GS1.** read and interpret drawings, work instructions, equipment manuals and process documents
- GS2.** communicate the process requirements to the supervisor and co-workers
- GS3.** attentively listen and comprehend the information given by the supervisor/team members
- GS4.** write work related information in English/regional language
- GS5.** recognise a workplace problem and take suitable action
- GS6.** analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently
- GS7.** plan and organise work according to the work requirements
- GS8.** complete the assigned tasks with minimum supervision
- GS9.** report to the supervisor or deal with a colleague individually, depending on the type of concern

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Identify work requirements</i>	<b>14</b>	<b>13</b>	-	<b>8</b>
<b>PC1.</b> identify the work to be done by interpreting the engineering drawings/work order/SOPs and instructions from supervisor	2	3	-	2
<b>PC2.</b> select the appropriate assembling and machining operations on the basis of drawing/work order information	7	4	-	4
<b>PC3.</b> identify the tools, equipment, machine and input materials required for the job	5	6	-	2
<i>Prepare for assembling and machining operations</i>	<b>16</b>	<b>37</b>	-	<b>12</b>
<b>PC4.</b> select and arrange the right material (metal blocks), tools, equipment, machines and consumables as per the SOP and job requirements	3	6	-	2
<b>PC5.</b> plan sequence of assembling and machining operations for fabricating tools, dies or assemblies on the basis of drawing/work order	2	6	-	2
<b>PC6.</b> use appropriate Personal Protective Equipment (PPE) for safe working in toolroom	1	2	-	1
<b>PC7.</b> check the input material, tools, equipment and machines for any defects and that they are as per the required quality standards	2	5	-	2
<b>PC8.</b> check and calibrate the tools and equipment before use	1	3	-	1
<b>PC9.</b> ensure that the helper/ assistant operator cleans the surface of machines and equipment and they are free from dust and any other impurities like grease, oil, paint etc.	2	3	-	1
<b>PC10.</b> set the assembling and machining equipment and their parameters as per the job requirements and SOP	5	12	-	3
<b>NOS Total</b>	<b>30</b>	<b>50</b>	-	<b>20</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ASC/N4101
<b>NOS Name</b>	Prepare for tool and die manufacturing operations
<b>Sector</b>	Automotive
<b>Sub-Sector</b>	Manufacturing
<b>Occupation</b>	Tool Room Operation
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	29/07/2021
<b>Next Review Date</b>	29/07/2026
<b>NSQC Clearance Date</b>	29/07/2021

## ASC/N4102: Perform tool and die manufacturing operations

### Description

This NOS is about manufacturing the tool and die by performing various machining and assembling techniques.

### Scope

The scope covers the following :

- Perform machining activities
- Create through holes using Electric Discharge Machining (EDM)
- Perform assembling activities
- Perform post-production activities

### Elements and Performance Criteria

#### *Perform machining activities*

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

- PC1.** measure and mark reference points/cutting lines on the metal blocks by using compass, calipers, rulers and other measuring tools
- PC2.** lift the metal blocks manually or by hoist and place the same securely on the working platform as indicated in the drawing/work instructions
- PC3.** cut the metal blocks into required size by using power operated/manual/automatic cutting tools as per the requirement
- PC4.** perform rough machining for initial block sizing of work piece
- PC5.** ensure that the right programme is selected in the CNC machine as defined in the SOP
- PC6.** perform various machining operations on the metal block to get the shape and dimension as per the drawing/work order
- PC7.** cut, shape and trim the metal block to specified lengths and shapes by using CNC machines
- PC8.** monitor the process parameters by reading the various gauges and correct them if not within standards
- PC9.** monitor the machine operations for any malfunctions/defects in the component and inform the supervisor/maintenance team for correction
- PC10.** measure the machined pieces and compare with the dimensions as prescribed in the work order and engineering drawing

#### *Create through holes using Electric Discharge Machining (EDM)*

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

- PC11.** set the EDM machine and process parameters such as current and voltage as per the requirement
- PC12.** load the work pieces carefully on the EDM machine
- PC13.** ensure that there is uniform flow of dielectric liquid i.e. flushing of the dielectric liquid to remove any debris which would have collected during the EDM process
- PC14.** start the EDM machine to make blind spots and holes in the die formation plate/metal work plate

**PC15.** change the electrodes in case there is a deviation from the specifications

*Perform assembling activities*

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

**PC16.** lift the work pieces manually or by hoist and place the same securely on the designated slot/space as indicated in the drawing/work instructions

**PC17.** perform assembly operations and assemble the machined parts and sub-assemblies as per the drawing/work order

**PC18.** use fastener, screw, bolt etc. to join the parts and assemblies properly

**PC19.** remove extra material on the tool and die by using cutting tools

**PC20.** perform finishing operations such as filing, shimming, grinding and polishing on flat and contoured surface of assembled tools and dies

**PC21.** carry out sealing of the required areas to prevent any leakage of water/air etc. during the usage of the tool and die

*Perform post-production activities*

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

**PC22.** check the tools and dies as per the work instructions for product quality

**PC23.** conduct spotting press operation including punch setting, hard pressing and component spotting to perform real time tests on the developed tools

**PC24.** perform the nitriding operation to harden the manufacturing tool and die

**PC25.** conduct test runs as specified in the Work Instructions/SOP manuals on assembled tools and dies to ensure conformance to the standards

**PC26.** segregate the completed pieces in to Ok pieces, defective pieces which can be repaired/reworked and pieces that are beyond repair

**PC27.** maintain and update all the records and reports related to production of tools and die as per the organisational guidelines

**PC28.** dispose scrap or waste material into the disposal area in accordance with the company's policies and environmental regulations

## **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

**KU1.** relevant standards and procedures followed in the company

**KU2.** basic process followed for tool and die manufacturing

**KU3.** how to read engineering drawings, sketches, work orders

**KU4.** Geometric Dimension and Tolerance limits

**KU5.** various types of machining processes such as drilling, boring, turning etc

**KU6.** various assembly operations and methods like bolting, torqueing, tightening, fitting, greasing, hammering, sealing, clamping etc.

**KU7.** the impact of various machining parameters on the final product

**KU8.** SOP recommended by the organisation for operating CNC and conventional machine

**KU9.** SOP recommended by the manufacturer for using tools and machines like grinders, lather machines, CNC operator wire cut and EDM machines and tools like Bolting guns, rivet guns, nuts, bolts, screw drivers, wrenches, hacksaws, hammers etc. required during tool and die manufacturing operations.



- KU10.** impact of various assembly process like bolting, torqueing, tightening, fitting, greasing, hammering, sealing, clamping on the final product
- KU11.** safety requirements during the tool and die manufacturing work
- KU12.** how to use measurement instruments like rulers, Vernier calipers, micrometer, weighing scale, gauges and other inspection equipment
- KU13.** post-production processes like inspection, cleaning, maintenance etc.
- KU14.** various type of defects in final products
- KU15.** how to check defects in the completed products

## **Generic Skills (GS)**

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

- GS1.** read and interpret drawings, work instructions, equipment manuals and process documents
- GS2.** communicate the process requirements to the supervisor and co-workers
- GS3.** attentively listen and comprehend the information given by the supervisor/team members
- GS4.** write work related information in English/regional language
- GS5.** recognise a workplace problem and take suitable action
- GS6.** analyse and apply the information gathered from observation, experience, reasoning or communication to act efficiently
- GS7.** plan and organise work according to the work requirements
- GS8.** complete the assigned tasks with minimum supervision
- GS9.** report to the supervisor or deal with a colleague individually, depending on the type of concern

## Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Perform machining activities</i>	<b>11</b>	<b>16</b>	-	<b>7</b>
<b>PC1.</b> measure and mark reference points/cutting lines on the metal blocks by using compass, calipers, rulers and other measuring tools	1	2	-	1
<b>PC2.</b> lift the metal blocks manually or by hoist and place the same securely on the working platform as indicated in the drawing/work instructions	1	1	-	-
<b>PC3.</b> cut the metal blocks into required size by using power operated/manual/automatic cutting tools as per the requirement	1	1	-	1
<b>PC4.</b> perform rough machining for initial block sizing of work piece	1	1	-	1
<b>PC5.</b> ensure that the right programme is selected in the CNC machine as defined in the SOP	1	-	-	1
<b>PC6.</b> perform various machining operations on the metal block to get the shape and dimension as per the drawing/work order	2	4	-	1
<b>PC7.</b> cut, shape and trim the metal block to specified lengths and shapes by using CNC machines	2	3	-	1
<b>PC8.</b> monitor the process parameters by reading the various gauges and correct them if not within standards	-	1	-	-
<b>PC9.</b> monitor the machine operations for any malfunctions/defects in the component and inform the supervisor/maintenance team for correction	1	1	-	1
<b>PC10.</b> measure the machined pieces and compare with the dimensions as prescribed in the work order and engineering drawing	1	2	-	-
<i>Create through holes using Electric Discharge Machining (EDM)</i>	<b>5</b>	<b>7</b>	-	<b>4</b>
<b>PC11.</b> set the EDM machine and process parameters such as current and voltage as per the requirement	1	2	-	1
<b>PC12.</b> load the work pieces carefully on the EDM machine	-	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC13.</b> ensure that there is uniform flow of dielectric liquid i.e. flushing of the dielectric liquid to remove any debris which would have collected during the EDM process	1	-	-	1
<b>PC14.</b> start the EDM machine to make blind spots and holes in the die formation plate/metal work plate	2	3	-	1
<b>PC15.</b> change the electrodes in case there is a deviation from the specifications	1	1	-	1
<i>Perform assembling activities</i>	<b>7</b>	<b>13</b>	-	<b>3</b>
<b>PC16.</b> lift the work pieces manually or by hoist and place the same securely on the designated slot/space as indicated in the drawing/work instructions	-	1	-	-
<b>PC17.</b> perform assembly operations and assemble the machined parts and sub-assemblies as per the drawing/work order	2	4	-	1
<b>PC18.</b> use fastener, screw, bolt etc. to join the parts and assemblies properly	1	2	-	-
<b>PC19.</b> remove extra material on the tool and die by using cutting tools	1	2	-	-
<b>PC20.</b> perform finishing operations such as filing, shimming, grinding and polishing on flat and contoured surface of assembled tools and dies	2	3	-	1
<b>PC21.</b> carry out sealing of the required areas to prevent any leakage of water/air etc. during the usage of the tool and die	1	1	-	1
<i>Perform post-production activities</i>	<b>7</b>	<b>14</b>	-	<b>6</b>
<b>PC22.</b> check the tools and dies as per the work instructions for product quality	2	3	-	1
<b>PC23.</b> conduct spotting press operation including punch setting, hard pressing and component spotting to perform real time tests on the developed tools	1	3	-	1
<b>PC24.</b> perform the nitriding operation to harden the manufacturing tool and die	1	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC25.</b> conduct test runs as specified in the Work Instructions/SOP manuals on assembled tools and dies to ensure conformance to the standards	1	2	-	1
<b>PC26.</b> segregate the completed pieces in to Ok pieces, defective pieces which can be repaired/reworked and pieces that are beyond repair	1	1	-	1
<b>PC27.</b> maintain and update all the records and reports related to production of tools and die as per the organisational guidelines	1	2	-	1
<b>PC28.</b> dispose scrap or waste material into the disposal area in accordance with the company's policies and environmental regulations	-	1	-	-
<b>NOS Total</b>	<b>30</b>	<b>50</b>	<b>-</b>	<b>20</b>

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	ASC/N4102
<b>NOS Name</b>	Perform tool and die manufacturing operations
<b>Sector</b>	Automotive
<b>Sub-Sector</b>	Manufacturing
<b>Occupation</b>	Tool Room Operation
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	29/07/2021
<b>Next Review Date</b>	29/07/2026
<b>NSQC Clearance Date</b>	29/07/2021

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

### Description

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

### Scope

The scope covers the following :

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

### Elements and Performance Criteria

#### *Introduction to Employability Skills*

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

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

#### *Constitutional values - Citizenship*

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

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

#### *Becoming a Professional in the 21st Century*

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

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

#### *Basic English Skills*

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

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

#### *Career Development & Goal Setting*

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

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

#### *Communication Skills*

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

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

#### *Diversity & Inclusion*

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

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

#### *Financial and Legal Literacy*

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

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

#### *Essential Digital Skills*

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

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

#### *Entrepreneurship*

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

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

#### *Customer Service*

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

- PC26.** identify different types of customers
- PC27.** identify and respond to customer requests and needs in a professional manner.
- PC28.** follow appropriate hygiene and grooming standards

### *Getting ready for apprenticeship & Jobs*

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

- PC29.** create a professional Curriculum vitae (Résumé)
- PC30.** search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively
- PC31.** apply to identified job openings using offline /online methods as per requirement
- PC32.** answer questions politely, with clarity and confidence, during recruitment and selection
- PC33.** identify apprenticeship opportunities and register for it as per guidelines and requirements

### **Knowledge and Understanding (KU)**

The individual on the job needs to know and understand:

- KU1.** need for employability skills and different learning and employability related portals
- KU2.** various constitutional and personal values
- KU3.** different environmentally sustainable practices and their importance
- KU4.** Twenty first (21st) century skills and their importance
- KU5.** how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up
- KU6.** importance of career development and setting long- and short-term goals
- KU7.** about effective communication
- KU8.** POSH Act
- KU9.** Gender sensitivity and inclusivity
- KU10.** different types of financial institutes, products, and services
- KU11.** how to compute income and expenditure
- KU12.** importance of maintaining safety and security in offline and online financial transactions
- KU13.** different legal rights and laws
- KU14.** different types of digital devices and the procedure to operate them safely and securely
- KU15.** how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.
- KU16.** how to identify business opportunities
- KU17.** types and needs of customers
- KU18.** how to apply for a job and prepare for an interview
- KU19.** apprenticeship scheme and the process of registering on apprenticeship portal

### **Generic Skills (GS)**

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

- GS1.** read and write different types of documents/instructions/correspondence
- GS2.** communicate effectively using appropriate language in formal and informal settings
- GS3.** behave politely and appropriately with all
- GS4.** how to work in a virtual mode



- GS5.** perform calculations efficiently
- GS6.** solve problems effectively
- GS7.** pay attention to details
- GS8.** manage time efficiently
- GS9.** maintain hygiene and sanitization to avoid infection

## Assessment Criteria

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

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

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

## National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	DGT/VSQ/N0102
<b>NOS Name</b>	Employability Skills (60 Hours)
<b>Sector</b>	Cross Sectoral
<b>Sub-Sector</b>	Professional Skills
<b>Occupation</b>	Employability
<b>NSQF Level</b>	4
<b>Credits</b>	2
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	31/08/2023
<b>Next Review Date</b>	31/08/2026
<b>NSQC Clearance Date</b>	31/08/2023

## 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) will be assigned marks proportional to its importance in NOS. SSC will also lay down the proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on the knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for the theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
6. 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
ASC/N9803.Organize work and resources (Manufacturing)	50	30	-	20	100	10
ASC/N4101.Prepare for tool and die manufacturing operations	30	50	-	20	100	30
ASC/N4102.Perform tool and die manufacturing operations	30	50	-	20	100	50
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	10
<b>Total</b>	<b>130</b>	<b>160</b>	<b>-</b>	<b>60</b>	<b>350</b>	<b>100</b>

## Acronyms

<b>NOS</b>	National Occupational Standard(s)
<b>NSQF</b>	National Skills Qualifications Framework
<b>QP</b>	Qualifications Pack
<b>TVET</b>	Technical and Vocational Education and Training
<b>PPE</b>	Personal Protective Equipment
<b>PwD</b>	Person with Disability
<b>SOP</b>	Standard Operating Practices

## Glossary

<b>Sector</b>	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.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	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.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	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.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	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.
<b>Knowledge and Understanding (KU)</b>	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.



<b>Organisational Context</b>	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.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/ Generic Skills (GS)</b>	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.
<b>Electives</b>	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.
<b>Options</b>	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.