Automotive Tool Room Technician

QP Code: ASC/Q4101

Version: 2.0

NSQF Level: 4

Automotive Skills Development Council || 153, Gr Floor, Okhla Industrial Area, Phase – III, Leela Building
New Delhi – 110020

Contents

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/N9802: Interact effectively with colleagues, customers and others
3. ASC/N4101: Prepare for tool and die manufacturing operations
4. ASC/N4102: Perform tool and die manufacturing operations

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Tool Room Operation
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7223.0200
Minimum Educational Qualification & Experience	8th Class + 2 years ITI with 2 years of relevant experience OR 10th Class pass with 2 years of relevant experience OR 10th Class + 2 years ITI OR 12th Class with 1 Year of experience

Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	29/07/2021
Next Review Date	29/07/2026
NSQC Approval Date	29/07/2021
Version	2.0

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
Maintain safe and secure working environment	11	5	-	7
PC1. identify hazardous activities and the possible causes of risks or accidents in the workplace	2	1	-	2
PC2. follow safe working practices while dealing with hazards to ensure safety of self and others	2	-	-	1
PC3. carry out routine check of the machine for identifying potential hazards	2	1	-	1
PC4. use appropriate protective clothing/equipment for specific tasks and work	2	1	-	1
PC5. follow safety hazards and preventive techniques during fire drill	2	1	-	1
PC6. report any identified breaches in health, safety and security policies and procedures to the designated person	1	1	-	1
Health and hygiene	7	5	-	2
PC7. ensure workstation and equipment are regularly clean and sanitized	2	2	-	1
PC8. clean hands with soap, alcohol-based sanitizer regularly	1	1	-	1
PC9. avoid contact with ill people and self-isolate in a similar situation	1	-	-	-
PC10. wear and dispose PPEs regularly and appropriately	1	-	-	-
PC11. report advanced hygiene and sanitation issues to appropriate authority	1	1	-	-
PC12. follow stress and anxiety management techniques	1	1	-	-
Perform work as per quality standards	5	3	-	2
PC13. 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
PC14. ensure team goals are given preference over individual goals	3	1	-	1
Effective waste management practices	15	10	-	4
PC15. follow the fundamentals of 5S for waste management	3	2	-	1
PC16. segregate waste into different categories	2	1	-	-
PC17. follow processes specified for disposal of hazardous waste	2	2	-	1
PC18. identify recyclable, non-recyclable and hazardous waste	4	2	-	1
PC19. dispose non-recyclable, recyclable and reusable waste appropriately at identified location	4	3	-	1
Material/energy conservation practices	12	7	-	5
PC20. identify ways to optimize usage of material in various tasks/activities/processes	2	1	-	1
PC21. check for spills/leakages in various tasks/activities/processes	2	1	-	1
PC22. plug spills/leakages and escalate to appropriate authority if unable to rectify	2	1	-	-
PC23. check if the equipment/machine is functioning normally before commencing work and rectify wherever required	2	2	-	1
PC24. report malfunctioning (fumes/ sparks/emission/vibration/noise) and lapse in maintenance of equipment	2	1	-	1
PC25. ensure electrical equipment and appliances are properly connected and turned off when not in use	2	1	-	1
NOS Total	**50**	**30**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N9803
NOS Name	Organize work and resources (Manufacturing)
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	29/07/2021
Next Review Date	29/07/2026
NSQC Clearance Date	29/07/2021

ASC/N9802: Interact effectively with colleagues, customers and others

Description

This NOS unit is about communicating with customers and colleagues/superiors, either in own work group or in other work groups within organisation.

Scope

The scope covers the following :

- Communicate effectively with colleagues, customers and others
- Interact with supervisor or superior

Elements and Performance Criteria

Communicate effectively with colleagues, customers and others

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

PC1. maintain clear communication with colleagues, customers and others, wherever needed, through all means i.e. face-to-face, telephonic or written

PC2. adjust communication styles to reflect gender and persons with disability (PwD) sensitivity

PC3. work in a way that shows respect for colleagues and others

PC4. follow the organisation's policies and procedures while working in a team

PC5. respect personal space of colleagues and customers

Interact with supervisor or superior

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

PC6. identify work requirements by receiving instructions from reporting supervisor

PC7. escalate problems to supervisors that cannot be handled including repairs and maintenance of machine

PC8. report the completed work

PC9. rectify errors as per feedback

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the importance of effective communication and establishing good working relationships with colleagues and supervisor

KU2. different methods of communication as per the circumstances

KU3. gender based concepts, issues and legislation

Generic Skills (GS)

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

GS1. read instructions/guidelines/procedures

GS2. listen effectively and orally communicate information
GS3. ask for clarification and advice from the concerned person
GS4. maintain positive and effective relationships with colleagues and customers
GS5. evaluate the possible solution(s) to the problem
GS6. deliver consistent and reliable service to customers
GS7. complete written work with attention to detail
GS8. check that the work meets customer requirements

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Communicate effectively with colleagues, customers and others	36	11	-	14
PC1. maintain clear communication with colleagues, customers and others, wherever needed, through all means i.e. face-to-face, telephonic or written	8	-	-	4
PC2. adjust communication styles to reflect gender and persons with disability (PwD) sensitivity	8	-	-	-
PC3. work in a way that shows respect for colleagues and others	7	4	-	3
PC4. follow the organisation's policies and procedures while working in a team	7	4	-	3
PC5. respect personal space of colleagues and customers	6	3	-	4
Interact with supervisor or superior	14	19	-	6
PC6. identify work requirements by receiving instructions from reporting supervisor	7	4	-	-
PC7. escalate problems to supervisors that cannot be handled including repairs and maintenance of machine	-	5	-	3
PC8. report the completed work	7	5	-	-
PC9. rectify errors as per feedback	-	5	-	3
NOS Total	**50**	**30**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N9802
NOS Name	Interact effectively with colleagues, customers and others
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	29/07/2021
Next Review Date	29/07/2026
NSQC Clearance Date	29/07/2021

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 maching 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
Identify work requirements	14	13	-	8
PC1. identify the work to be done by interpreting the engineering drawings/work order/SOPs and instructions from supervisor	2	3	-	2
PC2. select the appropriate assembling and machining operations on the basis of drawing/work order information	7	4	-	4
PC3. identify the tools, equipment, machine and input materials required for the job	5	6	-	2
Prepare for assembling and machining operations	16	37	-	12
PC4. select and arrange the right material (metal blocks), tools, equipment, machines and consumables as per the SOP and job requirements	3	6	-	2
PC5. plan sequence of assembling and machining operations for fabricating tools, dies or assemblies on the basis of drawing/work order	2	6	-	2
PC6. use appropriate Personal Protective Equipment (PPE) for safe working in toolroom	1	2	-	1
PC7. check the input material, tools, equipment and machines for any defects and that they are as per the required quality standards	2	5	-	2
PC8. check and calibrate the tools and equipment before use	1	3	-	1
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.	2	3	-	1
PC10. set the assembling and machining equipment and their parameters as per the job requirements and SOP	5	12	-	3
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N4101
NOS Name	Prepare for tool and die manufacturing operations
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Tool Room Operation
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	29/07/2021
Next Review Date	29/07/2026
NSQC Clearance Date	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
Perform machining activities	11	16	-	7
PC1. measure and mark reference points/cutting lines on the metal blocks by using compass, calipers, rulers and other measuring tools	1	2	-	1
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	1	1	-	-
PC3. cut the metal blocks into required size by using power operated/manual/automatic cutting tools as per the requirement	1	1	-	1
PC4. perform rough machining for initial block sizing of work piece	1	1	-	1
PC5. ensure that the right programme is selected in the CNC machine as defined in the SOP	1	-	-	1
PC6. perform various machining operations on the metal block to get the shape and dimension as per the drawing/work order	2	4	-	1
PC7. cut, shape and trim the metal block to specified lengths and shapes by using CNC machines	2	3	-	1
PC8. monitor the process parameters by reading the various gauges and correct them if not within standards	-	1	-	-
PC9. monitor the machine operations for any malfunctions/defects in the component and inform the supervisor/maintenance team for correction	1	1	-	1
PC10. measure the machined pieces and compare with the dimensions as prescribed in the work order and engineering drawing	1	2	-	-
Create through holes using Electric Discharge Machining (EDM)	5	7	-	4
PC11. set the EDM machine and process parameters such as current and voltage as per the requirement	1	2	-	1
PC12. load the work pieces carefully on the EDM machine	-	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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	1	-	-	1
PC14. start the EDM machine to make blind spots and holes in the die formation plate/metal work plate	2	3	-	1
PC15. change the electrodes in case there is a deviation from the specifications	1	1	-	1
Perform assembling activities	7	13	-	3
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	-	1	-	-
PC17. perform assembly operations and assemble the machined parts and sub-assemblies as per the drawing/work order	2	4	-	1
PC18. use fastener, screw, bolt etc. to join the parts and assemblies properly	1	2	-	-
PC19. remove extra material on the tool and die by using cutting tools	1	2	-	-
PC20. perform finishing operations such as filing, shimming, grinding and polishing on flat and contoured surface of assembled tools and dies	2	3	-	1
PC21. 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
Perform post-production activities	7	14	-	6
PC22. check the tools and dies as per the work instructions for product quality	2	3	-	1
PC23. conduct spotting press operation including punch setting, hard pressing and component spotting to perform real time tests on the developed tools	1	3	-	1
PC24. 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
PC25. 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
PC26. segregate the completed pieces in to Ok pieces, defective pieces which can be repaired/reworked and pieces that are beyond repair	1	1	-	1
PC27. maintain and update all the records and reports related to production of tools and die as per the organisational guidelines	1	2	-	1
PC28. dispose scrap or waste material into the disposal area in accordance with the company's policies and environmental regulations	-	1	-	-
NOS Total	**30**	**50**	**-**	**20**

National Occupational Standards (NOS) Parameters

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

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	15
ASC/N9802.Interact effectively with colleagues, customers and others	50	30	-	20	100	10
ASC/N4101.Prepare for tool and die manufacturing operations	30	50	-	20	100	45
ASC/N4102.Perform tool and die manufacturing operations	30	50	-	20	100	30
Total	**160**	**160**	**-**	**80**	**400**	**100**

Acronyms

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

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.