सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

कौशल गुणवत्ता प्रगति

Qualification Pack

Jr. Technician -Tool & Die Maker

QP Code: MSME/CSC/Q2901

Version: 1.0

NSQF Level: 3.5

MSME TECHNOLOGY CENTRE ||
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Contents

Qualification Pack

MSME/CSC/Q2901: Jr. Technician -Tool & Die Maker

Brief Job Description

Learners who attain this qualification are competent in Tool and Die Manufacturing.

Personal Attributes

Learners who attain this qualification are competent in Tool and Die Manufacturing.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. MSME/CSC/N2911: Create & Modify part using higher End software
2. MSME/CSC/N2910: Create & Modify part using higher End software
3. MSME/CSC/N2909: Design of Mould
4. MSME/CSC/N2908: Design of Mould
5. MSME/CSC/N2907: Assist in Operation of CNC Machine
6. MSME/CSC/N2906: Design of Press Tool
7. MSME/CSC/N2905: Design of Press Tool
8. MSME/CSC/N2904: Use and Application of Engineering Materials
9. MSME/CSC/N2903: Manufacturing of Tool & Die Parts
10. MSME/CSC/N2902: Checking dimensions of machined Part
11. MSME/CSC/N2901: Create Part Drawing using CAD
12. MSME/CSC/N2912: Employability Skills 000

Qualification Pack (QP) Parameters

Sector	Capital Goods
Sub-Sector	Machine Tools

Qualification Pack

Occupation	Tool & Die Fabrication
Country	India
NSQF Level	3.5
Credits	40
Aligned to NCO/ISCO/ISIC Code	7223.05 / Tool & Die Maker
Minimum Educational Qualification & Experience	10th grade pass with NA of experience OR Previous relevant Qualification of NSQF Level (Previous relevant Qualification of NSQF Level 3 in metal Working/ Machine Tool area) with 1.5 years of experience OR Previous relevant Qualification of NSQF Level 2.5 (Previous relevant Qualification of NSQF Level 2.5 in metal Working/ Machine Tool area) with 3 Years of experience
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	15 Years
Last Reviewed On	NA
Next Review Date	30/04/2027
NSQC Approval Date	30/04/2024
Version	1.0
Reference code on NQR	NCVET- QG-3.5-CG-02402-2024-V1-MSME
NQR Version	1.0

Qualification Pack

MSME/CSC/N2911: Create & Modify part using higher End software

Description

Understand design generative & interactive drafting

Scope

The scope covers the following :

- Understand design generative & interactive drafting

Elements and Performance Criteria

MSME/CCTDM/09 Generate Part Program for CNC Machine using CAM

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

PC1. Identify the toolbar and uses of functional key

PC2. Use the icon for the required command to draw the assigned geometry.

PC3. Make 2-D modeling by using the icons for different command.

PC4. • Demonstrate letter, point, spiral, and helix, break two pieces, trim much joint entity, close
• arc, break many pieces, simplify

PC5. • Demonstrate break at intersection, break circle, break drafting into line, convert to nurbs,
• and modify spline, hatch, dimension tools, dimension option.

PC6. Create 3-D models by using 3D tool bar, draft, extrude, fillet, trim icons.

PC7. Generate 3-D profile using used / lofted, revolved, offset, swept.

PC8. Generate tool path using machining toolbar and other commands

PC9. Do the machining using the options like 2-D countering,pocketing,2-D drilling, etc

PC10. Generate the toolpath on the model created by surface

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/CCTDM/09 Generate Part Program for CNC Machine using CAM	-	**100**	-	-
PC1. Identify the toolbar and uses of functional key	-	-	-	-
PC2. Use the icon for the required command to draw the assigned geometry.	-	-	-	-
PC3. Make 2-D modeling by using the icons for different command.	-	-	-	-
PC4. • Demonstrate letter, point, spiral, and helix, break two pieces, trim much joint entity, close • arc, break many pieces, simplify	-	-	-	-
PC5. • Demonstrate break at intersection, break circle, break drafting into line, convert to nurbs, • and modify spline, hatch, dimension tools, dimension option.	-	-	-	-
PC6. Create 3-D models by using 3D tool bar, draft, extrude, fillet, trim icons.	-	-	-	-
PC7. Generate 3-D profile using used / lofted, revolved, offset, swept.	-	-	-	-
PC8. Generate tool path using machining toolbar and other commands	-	-	-	-
PC9. Do the machining using the options like 2-D countering,pocketing,2-D drilling, etc	-	-	-	-
PC10. Generate the toolpath on the model created by surface	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N2911
NOS Name	Create & Modify part using higher End software
Sector	Capital Goods
Sub-Sector	
Occupation	Tool & Die Fabrication
NSQF Level	3.5
Credits	3
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

Qualification Pack

MSME/CSC/N2910: Create & Modify part using higher End software

Description

Understand different types of CAD software.

Scope

The scope covers the following :

- Understand different types of CAD software.

Elements and Performance Criteria

MSME/CCTDM/08 Create & Modify part using higher End software

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

PC1. • Obtain and review existing information with reference to the specified design
• requirement like 2D drawing and 3D model, existing sample, etc.

PC2. • Prepare outline ideas for the designs by using conceptual design work or collect similar
• information.

PC3. • Carry out the design process, utilizing the appropriate technology e.g. Tool/die is
• suitable/compliable to specified machines.

PC4. Obtain the tool part can be manufactured and assemble easily.

PC5. Select the suitable material for the design.

PC6. • Document all facets of the design activity and communicate the outcomes of the design
• process.

PC7. Deliver the designs in the appropriate format to the customers

PC8. Confirm and agree understanding of the design requirements

PC9. Deal with problems relating to the design requirements and agreed solutions

PC10. Identify design options which will meet requirements and the design specification

PC11. • Create designs that meet the customer's requirements as specified in the design brief for
• the engineering product or process

PC12. • Ensure that the designs comply with all relevant regulations, standards directives or
• codes of practice

PC13. • Deal promptly and effectively with problems within your control and seek help and
• guidance from the relevant people if you have problems that you cannot resolve

PC14. Ensure that the designs are protected in line with organizational procedures

PC15. • Evaluate the design against the established criteria, using appropriate evaluation
• methods

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/CCTDM/08 Create & Modify part using higher End software	-	**100**	-	-
PC1. • Obtain and review existing information with reference to the specified design • requirement like 2D drawing and 3D model, existing sample, etc.	-	-	-	-
PC2. • Prepare outline ideas for the designs by using conceptual design work or collect similar • information.	-	-	-	-
PC3. • Carry out the design process, utilizing the appropriate technology e.g. Tool/die is • suitable/compliable to specified machines.	-	-	-	-
PC4. Obtain the tool part can be manufactured and assemble easily.	-	-	-	-
PC5. Select the suitable material for the design.	-	-	-	-
PC6. • Document all facets of the design activity and communicate the outcomes of the design • process.	-	-	-	-
PC7. Deliver the designs in the appropriate format to the customers	-	-	-	-
PC8. Confirm and agree understanding of the design requirements	-	-	-	-
PC9. Deal with problems relating to the design requirements and agreed solutions	-	-	-	-
PC10. Identify design options which will meet requirements and the design specification	-	-	-	-
PC11. • Create designs that meet the customer's requirements as specified in the design brief for • the engineering product or process	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. • Ensure that the designs comply with all relevant regulations, standards directives or • codes of practice	-	-	-	-
PC13. • Deal promptly and effectively with problems within your control and seek help and • guidance from the relevant people if you have problems that you cannot resolve	-	-	-	-
PC14. Ensure that the designs are protected in line with organizational procedures	-	-	-	-
PC15. • Evaluate the design against the established criteria, using appropriate evaluation • methods	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N2910
NOS Name	Create & Modify part using higher End software
Sector	Capital Goods
Sub-Sector	
Occupation	Tool & Die Fabrication
NSQF Level	3.5
Credits	3
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CSC/N2909: Design of Mould

Description

Identify different types of mould with its parts.

Scope

The scope covers the following :

- Identify different types of mould with its parts.

Elements and Performance Criteria

MSME/CCTDM/07 Design of Mould

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

PC1. Identify- hand, semi-automatic, fully automatic moulds

PC2. • Determine the parts- functions, specifications, molding cycle and the method of • operation

PC3. • Identify compression mould, Injection mould, and transfer mould and determine the • materials used.

PC4. Describe construction, parts-applications- materials.

PC5. Identify parting line on the component.

PC6. • Identify the different types of gate used while designing mould and select the runner • system as per the requirements.

PC7. Demonstrate ejection system & cooling system.

PC8. Determine the types of split concept used (Side core- Sliding splits)

PC9. Describe the construction of dog leg cam mould and its application applications.

PC10. • Do detail study of related components regarding material, shape, shrinkage & parting • surface.

PC11. Do design of core and cavity inserts

PC12. Select standard mould base as per core and cavity plate dimension.

PC13. Make design calculation for parts of standard mould base.

PC14. Prepare design of locating ring, sprue bush, runner and gate.

PC15. Do design of two plate Injection mould with single cavity and multi cavity.

PC16. Design cooling channels in core and cavity plate.

PC17. Draw mould parts with specified symbols.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/CCTDM/07 Design of Mould	**-**	**100**	**-**	**-**
PC1. Identify- hand, semi-automatic, fully automatic moulds	-	-	-	-
PC2. • Determine the parts- functions, specifications, molding cycle and the method of • operation	-	-	-	-
PC3. • Identify compression mould, Injection mould, and transfer mould and determine the • materials used.	-	-	-	-
PC4. Describe construction, parts-applications-materials.	-	-	-	-
PC5. Identify parting line on the component.	-	-	-	-
PC6. • Identify the different types of gate used while designing mould and select the runner • system as per the requirements.	-	-	-	-
PC7. Demonstrate ejection system & cooling system.	-	-	-	-
PC8. Determine the types of split concept used (Side core- Sliding splits)	-	-	-	-
PC9. Describe the construction of dog leg cam mould and its application applications.	-	-	-	-
PC10. • Do detail study of related components regarding material, shape, shrinkage & parting • surface.	-	-	-	-
PC11. Do design of core and cavity inserts	-	-	-	-
PC12. Select standard mould base as per core and cavity plate dimension.	-	-	-	-
PC13. Make design calculation for parts of standard mould base.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. Prepare design of locating ring, sprue bush, runner and gate.	-	-	-	-
PC15. Do design of two plate Injection mould with single cavity and multi cavity.	-	-	-	-
PC16. Design cooling channels in core and cavity plate.	-	-	-	-
PC17. Draw mould parts with specified symbols.	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N2909
NOS Name	Design of Mould
Sector	Capital Goods
Sub-Sector	
Occupation	Tool & Die Fabrication
NSQF Level	3.5
Credits	4
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CSC/N2908: Design of Mould

Description

Identify different types of mould with its parts.

Scope

The scope covers the following :

- Identify different types of mould with its parts.

Elements and Performance Criteria

MSME/CCTDM/07 Design of Mould

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

PC1. Identify- hand, semi-automatic, fully automatic moulds

PC2. • Determine the parts- functions, specifications, molding cycle and the method of • operation

PC3. • Identify compression mould, Injection mould, and transfer mould and determine the • materials used.

PC4. Describe construction, parts-applications- materials.

PC5. Identify parting line on the component.

PC6. • Identify the different types of gate used while designing mould and select the runner • system as per the requirements.

PC7. Demonstrate ejection system & cooling system.

PC8. Determine the types of split concept used (Side core- Sliding splits)

PC9. Describe the construction of dog leg cam mould and its application applications.

PC10. • Do detail study of related components regarding material, shape, shrinkage & parting • surface.

PC11. Do design of core and cavity inserts

PC12. Select standard mould base as per core and cavity plate dimension.

PC13. Make design calculation for parts of standard mould base.

PC14. Prepare design of locating ring, sprue bush, runner and gate.

PC15. Do design of two plate Injection mould with single cavity and multi cavity.

PC16. Design cooling channels in core and cavity plate.

PC17. Draw mould parts with specified symbols.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/CCTDM/07 Design of Mould	**100**	**-**	**-**	**-**
PC1. Identify- hand, semi-automatic, fully automatic moulds	-	-	-	-
PC2. • Determine the parts- functions, specifications, molding cycle and the method of • operation	-	-	-	-
PC3. • Identify compression mould, Injection mould, and transfer mould and determine the • materials used.	-	-	-	-
PC4. Describe construction, parts-applications-materials.	-	-	-	-
PC5. Identify parting line on the component.	-	-	-	-
PC6. • Identify the different types of gate used while designing mould and select the runner • system as per the requirements.	-	-	-	-
PC7. Demonstrate ejection system & cooling system.	-	-	-	-
PC8. Determine the types of split concept used (Side core- Sliding splits)	-	-	-	-
PC9. Describe the construction of dog leg cam mould and its application applications.	-	-	-	-
PC10. • Do detail study of related components regarding material, shape, shrinkage & parting • surface.	-	-	-	-
PC11. Do design of core and cavity inserts	-	-	-	-
PC12. Select standard mould base as per core and cavity plate dimension.	-	-	-	-
PC13. Make design calculation for parts of standard mould base.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. Prepare design of locating ring, sprue bush, runner and gate.	-	-	-	-
PC15. Do design of two plate Injection mould with single cavity and multi cavity.	-	-	-	-
PC16. Design cooling channels in core and cavity plate.	-	-	-	-
PC17. Draw mould parts with specified symbols.	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N2908
NOS Name	Design of Mould
Sector	Capital Goods
Sub-Sector	
Occupation	Tool & Die Fabrication
NSQF Level	3.5
Credits	1
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CSC/N2907: Assist in Operation of CNC Machine

Description

Explain applications and advantages of CNC machines and technology

Scope

The scope covers the following :

- Explain applications and advantages of CNC machines and technology

Elements and Performance Criteria

Assist in Operation of CNC Machine MSME/CCTDM/0 6 & Version 1.0

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

PC1. Carried out the planning activity for operation.

PC2. • Use appropriate sources to obtain the required information e.g. Numerical control on • CNC machine, types of CNC control

PC3. • Calculation of technological data for CNC machining. Check that all the equipment is • correctly connected and in a safe and usable working condition

PC4. • Calculate parameters like speed feed, depth of cut etc. and set references for the various • operations.

PC5. Set up the suitable template/folder

PC6. Set up and check that all peripheral devices are connected and correctly

PC7. Establish coordinate system, orientation and views as per the job

PC8. confirm that the program is as per job specifications and contains all relevant information

PC9. Use appropriate techniques to create program that are sufficiently and clearly detailed

PC10. Use codes and other references that follow the required conventions

PC11. Make sure that programs are checked and approved by the appropriate person

PC12. Save the program in the appropriate file type and location

PC13. • Take help and guidance from the co-worker or supervisor if found any abnormality while • working

PC14. • Shut down the CAM system to a safe condition on completion of the programming • activities.

PC15. • Prepare programs, demonstrate, simulate and operate CNC lathe, milling, machines for • various machining operations.

PC16. Execute program and inspect simple geometrical forms / standard parts

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Assist in Operation of CNC Machine MSME/CCTDM/06 & Version 1.0	-	100	-	-
PC1. Carried out the planning activity for operation.	-	-	-	-
PC2. • Use appropriate sources to obtain the required information e.g. Numerical control on • CNC machine, types of CNC control	-	-	-	-
PC3. • Calculation of technological data for CNC machining. Check that all the equipment is • correctly connected and in a safe and usable working condition	-	-	-	-
PC4. • Calculate parameters like speed feed, depth of cut etc. and set references for the various • operations.	-	-	-	-
PC5. Set up the suitable template/folder	-	-	-	-
PC6. Set up and check that all peripheral devices are connected and correctly	-	-	-	-
PC7. Establish coordinate system, orientation and views as per the job	-	-	-	-
PC8. confirm that the program is as per job specifications and contains all relevant information	-	-	-	-
PC9. Use appropriate techniques to create program that are sufficiently and clearly detailed	-	-	-	-
PC10. Use codes and other references that follow the required conventions	-	-	-	-
PC11. Make sure that programs are checked and approved by the appropriate person	-	-	-	-
PC12. Save the program in the appropriate file type and location	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. • Take help and guidance from the co-worker or supervisor if found any abnormality while • working	-	-	-	-
PC14. • Shut down the CAM system to a safe condition on completion of the programming • activities.	-	-	-	-
PC15. • Prepare programs, demonstrate, simulate and operate CNC lathe, milling, machines for • various machining operations.	-	-	-	-
PC16. Execute program and inspect simple geometrical forms / standard parts	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N2907
NOS Name	Assist in Operation of CNC Machine
Sector	Capital Goods
Sub-Sector	
Occupation	Tool & Die Fabrication
NSQF Level	3.5
Credits	5
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CSC/N2906: Design of Press Tool

Description

Prepare the component drawing, strip layout, Design Ejection system and calculate the tonnage, plate sizes, decide feeding of strip.

Scope

The scope covers the following :

- Prepare the component drawing, strip layout, Design Ejection system and calculate the tonnage,
- plate sizes, decide feeding of strip.

Elements and Performance Criteria

MSME/CCTDM/05 Design of Press Tool

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

PC1. • Explain basics of a press tool and its specification and shearing and non-shearing
• operations

PC2. Identify types of die-sets and proper material for die-set.

PC3. Calculate cutting force, cutting clearance & stripping force.

PC4. Identify the progressive tool parts and the number of stations.

PC5. Assemble punches for Piercing, Blanking, and Notching Lancing.

PC6. Identify different types of stops used in press tool.

PC7. Calculate unbent strip length for a bending component

PC8. Explain construction, application of compound die, Draw die and combination die.

PC9. Perform required calculation for drawing tool.

PC10. • Make strip layout, determine cutting clearance, cutting force, press tonnage, economy of
• material etc.

PC11. Calculate the design parameters for die plate and punches

PC12. Do Design calculations for top and bottom plates, guide pillar & bushes

PC13. Find out the plug point and do design of shank

PC14. Prepare assembly drawing and mention the part numbers and prepare bill of material.

PC15. Prepare part detailing of press tool with GD&T and surface finish symbol.

PC16. Draw Top plate and bottom plate showing GD&T and machining symbols

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/CCTDM/05 Design of Press Tool	-	100	-	-
PC1. • Explain basics of a press tool and its specification and shearing and non-shearing • operations	-	-	-	-
PC2. Identify types of die-sets and proper material for die-set.	-	-	-	-
PC3. Calculate cutting force, cutting clearance & stripping force.	-	-	-	-
PC4. Identify the progressive tool parts and the number of stations.	-	-	-	-
PC5. Assemble punches for Piercing, Blanking, and Notching Lancing.	-	-	-	-
PC6. Identify different types of stops used in press tool.	-	-	-	-
PC7. Calculate unbent strip length for a bending component	-	-	-	-
PC8. Explain construction, application of compound die, Draw die and combination die.	-	-	-	-
PC9. Perform required calculation for drawing tool.	-	-	-	-
PC10. • Make strip layout, determine cutting clearance, cutting force, press tonnage, economy of • material etc.	-	-	-	-
PC11. Calculate the design parameters for die plate and punches	-	-	-	-
PC12. Do Design calculations for top and bottom plates, guide pillar & bushes	-	-	-	-
PC13. Find out the plug point and do design of shank	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. Prepare assembly drawing and mention the part numbers and prepare bill of material.	-	-	-	-
PC15. Prepare part detailing of press tool with GD&T and surface finish symbol.	-	-	-	-
PC16. Draw Top plate and bottom plate showing GD&T and machining symbols	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N2906
NOS Name	Design of Press Tool
Sector	Capital Goods
Sub-Sector	
Occupation	Tool & Die Fabrication
NSQF Level	3.5
Credits	4
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CSC/N2905: Design of Press Tool

Description

Prepare the component drawing, strip layout, Design Ejection system and calculate the tonnage, plate sizes, decide feeding of strip.

Scope

The scope covers the following :

- Prepare the component drawing, strip layout, Design Ejection system and calculate the tonnage,
- plate sizes, decide feeding of strip.

Elements and Performance Criteria

MSME/CCTDM/05 Design of Press Tool

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

PC1. • Explain basics of a press tool and its specification and shearing and non-shearing
• operations

PC2. Identify types of die-sets and proper material for die-set.

PC3. Calculate cutting force, cutting clearance & stripping force.

PC4. Identify the progressive tool parts and the number of stations.

PC5. Assemble punches for Piercing, Blanking, and Notching Lancing.

PC6. Identify different types of stops used in press tool.

PC7. Calculate unbent strip length for a bending component

PC8. Explain construction, application of compound die, Draw die and combination die.

PC9. Perform required calculation for drawing tool.

PC10. • Make strip layout, determine cutting clearance, cutting force, press tonnage, economy of
• material etc.

PC11. Calculate the design parameters for die plate and punches

PC12. Do Design calculations for top and bottom plates, guide pillar & bushes

PC13. Find out the plug point and do design of shank

PC14. Prepare assembly drawing and mention the part numbers and prepare bill of material.

PC15. Prepare part detailing of press tool with GD&T and surface finish symbol.

PC16. Draw Top plate and bottom plate showing GD&T and machining symbols

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/CCTDM/05 Design of Press Tool	**100**	**-**	**-**	**-**
PC1. • Explain basics of a press tool and its specification and shearing and non-shearing • operations	-	-	-	-
PC2. Identify types of die-sets and proper material for die-set.	-	-	-	-
PC3. Calculate cutting force, cutting clearance & stripping force.	-	-	-	-
PC4. Identify the progressive tool parts and the number of stations.	-	-	-	-
PC5. Assemble punches for Piercing, Blanking, and Notching Lancing.	-	-	-	-
PC6. Identify different types of stops used in press tool.	-	-	-	-
PC7. Calculate unbent strip length for a bending component	-	-	-	-
PC8. Explain construction, application of compound die, Draw die and combination die.	-	-	-	-
PC9. Perform required calculation for drawing tool.	-	-	-	-
PC10. • Make strip layout, determine cutting clearance, cutting force, press tonnage, economy of • material etc.	-	-	-	-
PC11. Calculate the design parameters for die plate and punches	-	-	-	-
PC12. Do Design calculations for top and bottom plates, guide pillar & bushes	-	-	-	-
PC13. Find out the plug point and do design of shank	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. Prepare assembly drawing and mention the part numbers and prepare bill of material.	-	-	-	-
PC15. Prepare part detailing of press tool with GD&T and surface finish symbol.	-	-	-	-
PC16. Draw Top plate and bottom plate showing GD&T and machining symbols	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N2905
NOS Name	Design of Press Tool
Sector	Capital Goods
Sub-Sector	
Occupation	Tool & Die Fabrication
NSQF Level	3.5
Credits	1
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CSC/N2904: Use and Application of Engineering Materials

Description

Understand knowledge on the structure, properties, treatment, testing of engineering materials.

Scope

The scope covers the following :

- Understand knowledge on the structure, properties, treatment, testing of engineering materials.

Elements and Performance Criteria

MSME/CCTDM/04 Use and Application of Engineering Materials

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

PC1. Explain mechanical properties of different materials.

PC2. Identify ferrous and non-ferrous materials.

PC3. Distinguish between steel and iron.

PC4. State the effect of alloying elements & High carbon steels.

PC5. • Describe tool steels and tool & die materials, Composition, properties and
• applications.

PC6. • Describe the composition, properties and application of spring steel, stainless steel and
• high speed steel.

PC7. Explain the importance of heat treatment.

PC8. Explain the effect of annealing and normalizing process on the steel.

PC9. Describe the process of hardening and tempering.

PC10. Identify different types of non-ferrous metal.

PC11. Describe aluminum alloys and copper alloys and their importance

PC12. • State the trade name, properties and applications of thermoplastic and thermosets
• plastics materials.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/CCTDM/04 Use and Application of Engineering Materials	**100**	**-**	**-**	**-**
PC1. Explain mechanical properties of different materials.	-	-	-	-
PC2. Identify ferrous and non-ferrous materials.	-	-	-	-
PC3. Distinguish between steel and iron.	-	-	-	-
PC4. State the effect of alloying elements & High carbon steels.	-	-	-	-
PC5. • Describe tool steels and tool & die materials, Composition, properties and • applications.	-	-	-	-
PC6. • Describe the composition, properties and application of spring steel, stainless steel and • high speed steel.	-	-	-	-
PC7. Explain the importance of heat treatment.	-	-	-	-
PC8. Explain the effect of annealing and normalizing process on the steel.	-	-	-	-
PC9. Describe the process of hardening and tempering.	-	-	-	-
PC10. Identify different types of non-ferrous metal.	-	-	-	-
PC11. Describe aluminum alloys and copper alloys and their importance	-	-	-	-
PC12. • State the trade name, properties and applications of thermoplastic and thermosets • plastics materials.	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N2904
NOS Name	Use and Application of Engineering Materials
Sector	Capital Goods
Sub-Sector	
Occupation	Tool & Die Fabrication
NSQF Level	3.5
Credits	1
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CSC/N2903: Manufacturing of Tool & Die Parts

Description

Explain Hand Tools, Marking Tools and Drills

Scope

The scope covers the following :

- Explain Hand Tools, Marking Tools and Drills

Elements and Performance Criteria

MSME/CCTDM/03 Manufacturing of Tool & Die Parts

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

PC1. Explain occupational health and Safety

PC2. Explain about safety rules.

PC3. State the name and location of people responsible for health and safety in the workplace

PC4. • State the names and location of documents that refer to health and safety in the
• workplace

PC5. Using various appropriate fire extinguishers on different types of fires correctly

PC6. Explain the PPE in Industrial Safety.

PC7. • Explain Basic injury prevention, Hazard identification and avoidance, safety signs for
• Danger, Warning, caution & personal safety message

PC8. Explain the types of Waste disposal techniques/ Management.

PC9. Explain the importance of occupational health and safety at workplace.

PC10. Explain the concept of 5S

PC11. the 5S cycle, activities and 5S program overview

PC12. Describe 5S program steps

PC13. Explain different types of machine tools (Milling machines)

PC14. Explain the Parts of a Milling machine

PC15. Explain various job holding device on Milling machine

PC16. Explain the function of Milling machine

PC17. Explain various operations performed on Milling Machine

PC18. Explain Methods of performing tapper Milling operation

PC19. Explain Taper Milling, step Milling, radius making and parting-off.

PC20. Explain Different types of fitting tools and marking tools used in fitting practice.

PC21. Explain the systems of unit - FPS, CGS, MKS/SI unit.

PC22. unit of length, Mass and time and Conversion of units

PC23. • Mensuration: Area and perimeter of square, rectangle, parallelogram, triangle, circle,
• semi-circle, Volume of solids and cylinder

PC24. Explain quality policy and quality organization: Indian and international organization

PC25. Explain the concept of quality Assurance and 7 QC Tools.

PC26. Explain the types of machine tools used in Tool Room

PC27. • To prepare a job on a lathe involving facing, outside turning, taper turning, step turning,
• radius making and parting-off.

PC28. Describe different types of fitting and marking tools used in fitting practice.

PC29. To prepare simple engineering components

PC30. • To prepare horizontal surface/ vertical surface/ curved surface/ slots or V-grooves on a
• shaper/ planner

PC31. To prepare a job involving side and face milling on a milling machine.

PC32. Explain the uses of jigs & fixtures in the machining process.

PC33. Explain the use of drill jigs & selection of fixtures on the basis of component

PC34. Explain the uses of locator types.

PC35. Use location principle of locator for different jobs.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/CCTDM/03 Manufacturing of Tool & Die Parts	**-**	**100**	**-**	**-**
PC1. Explain occupational health and Safety	-	-	-	-
PC2. Explain about safety rules.	-	-	-	-
PC3. State the name and location of people responsible for health and safety in the workplace	-	-	-	-
PC4. • State the names and location of documents that refer to health and safety in the • workplace	-	-	-	-
PC5. Using various appropriate fire extinguishers on different types of fires correctly	-	-	-	-
PC6. Explain the PPE in Industrial Safety.	-	-	-	-
PC7. • Explain Basic injury prevention, Hazard identification and avoidance, safety signs for • Danger, Warning, caution & personal safety message	-	-	-	-
PC8. Explain the types of Waste disposal techniques/ Management.	-	-	-	-
PC9. Explain the importance of occupational health and safety at workplace.	-	-	-	-
PC10. Explain the concept of 5S	-	-	-	-
PC11. the 5S cycle, activities and 5S program overview	-	-	-	-
PC12. Describe 5S program steps	-	-	-	-
PC13. Explain different types of machine tools (Milling machines)	-	-	-	-
PC14. Explain the Parts of a Milling machine	-	-	-	-
PC15. Explain various job holding device on Milling machine	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC16. Explain the function of Milling machine	-	-	-	-
PC17. Explain various operations performed on Milling Machine	-	-	-	-
PC18. Explain Methods of performing tapper Milling operation	-	-	-	-
PC19. Explain Taper Milling, step Milling, radius making and parting-off.	-	-	-	-
PC20. Explain Different types of fitting tools and marking tools used in fitting practice.	-	-	-	-
PC21. Explain the systems of unit - FPS, CGS, MKS/SI unit.	-	-	-	-
PC22. unit of length, Mass and time and Conversion of units	-	-	-	-
PC23. • Mensuration: Area and perimeter of square, rectangle, parallelogram, triangle, circle, • semi-circle, Volume of solids and cylinder	-	-	-	-
PC24. Explain quality policy and quality organization: Indian and international organization	-	-	-	-
PC25. Explain the concept of quality Assurance and 7 QC Tools.	-	-	-	-
PC26. Explain the types of machine tools used in Tool Room	-	-	-	-
PC27. • To prepare a job on a lathe involving facing, outside turning, taper turning, step turning, • radius making and parting-off.	-	-	-	-
PC28. Describe different types of fitting and marking tools used in fitting practice.	-	-	-	-
PC29. To prepare simple engineering components	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC30. • To prepare horizontal surface/ vertical surface/ curved surface/ slots or V-grooves on a • shaper/ planner	-	-	-	-
PC31. To prepare a job involving side and face milling on a milling machine.	-	-	-	-
PC32. Explain the uses of jigs & fixtures in the machining process.	-	-	-	-
PC33. Explain the use of drill jigs & selection of fixtures on the basis of component	-	-	-	-
PC34. Explain the uses of locator types.	-	-	-	-
PC35. Use location principle of locator for different jobs.	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N2903
NOS Name	Manufacturing of Tool & Die Parts
Sector	Capital Goods
Sub-Sector	
Occupation	Tool & Die Fabrication
NSQF Level	3.5
Credits	8
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CSC/N2902: Checking dimensions of machined Part

Description

Understand End and line Standard

Scope

The scope covers the following :

- Understand End and line Standard

Elements and Performance Criteria

MSME/CCTDM/02 Checking dimensions of machined Part

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

PC1. • Explain the linear measuring Instruments - Vernier Caliper (Digital, Analog and Dial type) • and micrometer (Analog and Digital type)

PC2. • Calculate the least count of various instruments (Venire Caliper, Micrometer and Height • Gauge)

PC3. Explain the diametrical Measurement: inside diameter by inside micrometer

PC4. • Demonstrate the Diametrical Measurement: depth of hole or recess by depth • micrometer.

PC5. Find out Angle and taper measurements by bevel protractor and Sine bar.

PC6. Find out the flatness of Surface plate by use of spirit level and optical flat.

PC7. Measurement of surface roughness by roughness tester.

PC8. measurement of micro threads (British , Acme, Matric) by using profile projector

PC9. Apply limits, fits and tolerances for a given geometry

PC10. Check various dimensions using gauges (Go-No GO Type, plug, ring etc.)

PC11. Measurement of screw thread using various instruments

PC12. List Geometrical Dimensions & Tolerances used in manufacturing industries

PC13. Evaluate and do analysis of parameters of screw threads Measurement

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/CCTDM/02 Checking dimensions of machined Part	-	100	-	-
PC1. • Explain the linear measuring Instruments - Vernier Caliper (Digital, Analog and Dial type) • and micrometer (Analog and Digital type)	-	-	-	-
PC2. • Calculate the least count of various instruments (Venire Caliper, Micrometer and Height • Gauge)	-	-	-	-
PC3. Explain the diametrical Measurement: inside diameter by inside micrometer	-	-	-	-
PC4. • Demonstrate the Diametrical Measurement: depth of hole or recess by depth • micrometer.	-	-	-	-
PC5. Find out Angle and taper measurements by bevel protractor and Sine bar.	-	-	-	-
PC6. Find out the flatness of Surface plate by use of spirit level and optical flat.	-	-	-	-
PC7. Measurement of surface roughness by roughness tester.	-	-	-	-
PC8. measurement of micro threads (British , Acme, Matric) by using profile projector	-	-	-	-
PC9. Apply limits, fits and tolerances for a given geometry	-	-	-	-
PC10. Check various dimensions using gauges (Go-No GO Type, plug, ring etc.)	-	-	-	-
PC11. Measurement of screw thread using various instruments	-	-	-	-
PC12. List Geometrical Dimensions & Tolerances used in manufacturing industries	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. Evaluate and do analysis of parameters of screw threads Measurement	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N2902
NOS Name	Checking dimensions of machined Part
Sector	Capital Goods
Sub-Sector	
Occupation	Tool & Die Fabrication
NSQF Level	3.5
Credits	1
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CSC/N2901: Create Part Drawing using CAD

Description

Explain the application of engineering drawing.

Scope

The scope covers the following :

- Explain the application of engineering drawing.

Elements and Performance Criteria

MSME/CCTDM/01 Create Part Drawing using CAD

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

PC1. Explain the Importance of Engineering drawing,

PC2. Explanation the scope and objective of Engineering Drawing

PC3. • Demonstrate and explain drawing Standards: Size of drawing sheets – Layout of drawing
• sheet – Title Blocks – Types of lines – Folding of drawing sheets

PC4. Use of dimensioning techniques according to Standard of dimensions

PC5. Demonstrate orthographic & Isometric projection by using a viewing box and a model

PC6. Demonstrate first angle and third angle projection

PC7. Use of symbol in projections -Front view, top view and side view

PC8. Demonstrate the use of Auto CAD and Auto CAD interface

PC9. Apply coordinates systems in auto CAD

PC10. Demonstrate the use of tool bars.

PC11. Create solid field area (Hatching, Gradient)

PC12. Edit objects using the object property tool bar and various methods.

PC13. Use sketch settings and Style toolbar (text style, Multilayer style etc.)

PC14. Edit object using object property toolbar & various method.

PC15. Create the replica of model using copy, array command

PC16. Work with models in the modify toolbar.

PC17. Identify the appropriate Tool to create and modify the model

PC18. Change the orientation of the object by aligns, offset, rotate command

PC19. Apply standard dimension in a mechanical component.

PC20. • Use of dimensioning Methods: Linear, Align, ordinates, Radius, Diameter, Arc length,
• angular etc,

PC21. Use of leader with text, block reference

PC22. Edit or modify the CAD Drawings

PC23. Use of layers Management and its applications

PC24. Apply GD& T Symbols in drawing

PC25. Develop proper drawing layout.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/CCTDM/01 Create Part Drawing using CAD	**-**	**100**	**-**	**-**
PC1. Explain the Importance of Engineering drawing,	-	-	-	-
PC2. Explanation the scope and objective of Engineering Drawing	-	-	-	-
PC3. • Demonstrate and explain drawing Standards: Size of drawing sheets – Layout of drawing • sheet – Title Blocks – Types of lines – Folding of drawing sheets	-	-	-	-
PC4. Use of dimensioning techniques according to Standard of dimensions	-	-	-	-
PC5. Demonstrate orthographic & Isometric projection by using a viewing box and a model	-	-	-	-
PC6. Demonstrate first angle and third angle projection	-	-	-	-
PC7. Use of symbol in projections -Front view, top view and side view	-	-	-	-
PC8. Demonstrate the use of Auto CAD and Auto CAD interface	-	-	-	-
PC9. Apply coordinates systems in auto CAD	-	-	-	-
PC10. Demonstrate the use of tool bars.	-	-	-	-
PC11. Create solid field area (Hatching, Gradient)	-	-	-	-
PC12. Edit objects using the object property tool bar and various methods.	-	-	-	-
PC13. Use sketch settings and Style toolbar (text style, Multilayer style etc.)	-	-	-	-
PC14. Edit object using object property toolbar & various method.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. Create the replica of model using copy, array command	-	-	-	-
PC16. Work with models in the modify toolbar.	-	-	-	-
PC17. Identify the appropriate Tool to create and modify the model	-	-	-	-
PC18. Change the orientation of the object by aligns, offset, rotate command	-	-	-	-
PC19. Apply standard dimension in a mechanical component.	-	-	-	-
PC20. • Use of dimensioning Methods: Linear, Align, ordinates, Radius, Diameter, Arc length, • angular etc,	-	-	-	-
PC21. Use of leader with text, block reference	-	-	-	-
PC22. Edit or modify the CAD Drawings	-	-	-	-
PC23. Use of layers Management and its applications	-	-	-	-
PC24. Apply GD& T Symbols in drawing	-	-	-	-
PC25. Develop proper drawing layout.	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N2901
NOS Name	Create Part Drawing using CAD
Sector	Capital Goods
Sub-Sector	
Occupation	Tool & Die Fabrication
NSQF Level	3.5
Credits	5
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CSC/N2912: Employability Skills 000

Description

After completion of course Trainee should be able to Understand about employability .

Scope

The scope covers the following :

- After completion of course Trainee should be able to Understand about employability .

Elements and Performance Criteria

MSME/ES/03 Employability Skills

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

PC1. • Understand the significance of employability skills in meeting the current job market • requirement and future of work.

PC2. Identify and explore learning and employability relevant portals

PC3. • Research about the different industries, job market trends, latest skills required and the • available opportunities.

PC4. • recognize the significance of constitutional values, including civic rights and duties, • citizenship, responsibility towards society etc. for personal growth and the nation's • progress

PC5. • Follow personal values and ethics such as honesty, integrity, caring and respecting • others, etc.

PC6. follow and promote environmentally sustainable practices

PC7. recognize the significance of 21st Century Skills for employment

PC8. • practice the 21st Century Skills such as Self-Awareness, Behavior Skills, time • management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal and • professional life

PC9. adopt a continuous learning mindset for personal and professional development

PC10. • use English as a medium of formal and informal communication while dealing with • topics of everyday conversation in different contexts

PC11. • speak over the phone in English, in an audible manner, using appropriate greetings, • opening, and closing statements both on personal and work front

PC12. • read and understand routine information, instructions, emails, letters etc. written in • English

PC13. Write short messages, notes, letters, e-mails etc., using accurate English

PC14. Identify career goals based on the skills, interests, knowledge, and personal attributes

PC15. Prepare a career development plan with short- and long-term goals.

PC16. • Follow verbal and non-verbal communication etiquette while communicating in • professional and public settings

PC17. use active listening techniques for effective communication

PC18. • communicate in writing using appropriate style and format based on formal or informal • requirements

PC19. work collaboratively with others in a team

PC20. • ensure personal behavior, conduct, and use appropriate communication by taking • gender into consideration

PC21. empathize with a PwD and aid a PwD, if asked

PC22. • escalate any issues related to sexual harassment at the workplace in accordance with • the POSH Act

PC23. • Identify and select reliable institutions for various financial products and services such • as bank account, debit and credit cards, loans, insurance etc.

PC24. • carry out offline and online financial transactions, safely and securely, using various • methods and check the entries in the passbook

PC25. • Identify common components of salary and compute income, expenses, taxes, • investments etc.

PC26. identify relevant rights and laws and use legal aids to fight against legal exploitation

PC27. operate digital devices and use their features and applications securely and safely

PC28. • Carry out basic internet operations by connecting to the internet safely and securely, • using the mobile data or other available networks through Bluetooth, Wi-Fi, etc.

PC29. display responsible online behavior while using various social media platforms

PC30. • create a personal email account, send and process received messages as per • requirement

PC31. • carry out basic procedures in documents, spreadsheets and presentations using • respective and appropriate applications

PC32. utilize virtual collaboration tools to work effectively

PC33. identify different types of Entrepreneurship and Enterprises

PC34. • use research and networking skills to identify and assess opportunities for potential • business

PC35. • develop a business plan and a work model, considering the 4Ps of Marketing- Product, • Price, Place and Promotion

PC36. • identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the • potential business opportunity

PC37. identify different types of customers

PC38. identify and respond to customer requests and needs in a professional manner

PC39. use appropriate tools to collect customer feedback

PC40. Follow appropriate hygiene and grooming standards.

PC41. create a professional Curriculum vitae (Résumé)

PC42. • search for suitable jobs using reliable offline and online sources such as Employment • exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC43. apply to identified job openings using offline /online methods as per requirement

PC44. answer questions politely, with clarity and confidence, during recruitment and selection

PC45. • Identify apprenticeship opportunities and register for it as per guidelines and • requirements.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/ES/03 Employability Skills	**100**	**-**	**-**	**-**
PC1. • Understand the significance of employability skills in meeting the current job market • requirement and future of work.	-	-	-	-
PC2. Identify and explore learning and employability relevant portals	-	-	-	-
PC3. • Research about the different industries, job market trends, latest skills required and the • available opportunities.	-	-	-	-
PC4. • recognize the significance of constitutional values, including civic rights and duties, • citizenship, responsibility towards society etc. for personal growth and the nation's • progress	-	-	-	-
PC5. • Follow personal values and ethics such as honesty, integrity, caring and respecting • others, etc.	-	-	-	-
PC6. follow and promote environmentally sustainable practices	-	-	-	-
PC7. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC8. • practice the 21st Century Skills such as Self-Awareness, Behavior Skills, time • management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal and • professional life	-	-	-	-
PC9. adopt a continuous learning mindset for personal and professional development	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. • use English as a medium of formal and informal communication while dealing with • topics of everyday conversation in different contexts	-	-	-	-
PC11. • speak over the phone in English, in an audible manner, using appropriate greetings, • opening, and closing statements both on personal and work front	-	-	-	-
PC12. • read and understand routine information, instructions, emails, letters etc. written in • English	-	-	-	-
PC13. Write short messages, notes, letters, e-mails etc., using accurate English	-	-	-	-
PC14. Identify career goals based on the skills, interests, knowledge, and personal attributes	-	-	-	-
PC15. Prepare a career development plan with short- and long-term goals.	-	-	-	-
PC16. • Follow verbal and non-verbal communication etiquette while communicating in • professional and public settings	-	-	-	-
PC17. use active listening techniques for effective communication	-	-	-	-
PC18. • communicate in writing using appropriate style and format based on formal or informal • requirements	-	-	-	-
PC19. work collaboratively with others in a team	-	-	-	-
PC20. • ensure personal behavior, conduct, and use appropriate communication by taking • gender into consideration	-	-	-	-
PC21. empathize with a PwD and aid a PwD, if asked	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC22. • escalate any issues related to sexual harassment at the workplace in accordance with • the POSH Act	-	-	-	-
PC23. • Identify and select reliable institutions for various financial products and services such • as bank account, debit and credit cards, loans, insurance etc.	-	-	-	-
PC24. • carry out offline and online financial transactions, safely and securely, using various • methods and check the entries in the passbook	-	-	-	-
PC25. • Identify common components of salary and compute income, expenses, taxes, • investments etc.	-	-	-	-
PC26. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
PC27. operate digital devices and use their features and applications securely and safely	-	-	-	-
PC28. • Carry out basic internet operations by connecting to the internet safely and securely, • using the mobile data or other available networks through Bluetooth, Wi-Fi, etc.	-	-	-	-
PC29. display responsible online behavior while using various social media platforms	-	-	-	-
PC30. • create a personal email account, send and process received messages as per • requirement	-	-	-	-
PC31. • carry out basic procedures in documents, spreadsheets and presentations using • respective and appropriate applications	-	-	-	-
PC32. utilize virtual collaboration tools to work effectively	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC33. identify different types of Entrepreneurship and Enterprises	-	-	-	-
PC34. • use research and networking skills to identify and assess opportunities for potential • business	-	-	-	-
PC35. • develop a business plan and a work model, considering the 4Ps of Marketing- Product, • Price, Place and Promotion	-	-	-	-
PC36. • identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the • potential business opportunity	-	-	-	-
PC37. identify different types of customers	-	-	-	-
PC38. identify and respond to customer requests and needs in a professional manner	-	-	-	-
PC39. use appropriate tools to collect customer feedback	-	-	-	-
PC40. Follow appropriate hygiene and grooming standards.	-	-	-	-
PC41. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC42. • search for suitable jobs using reliable offline and online sources such as Employment • exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC43. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC44. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC45. • Identify apprenticeship opportunities and register for it as per guidelines and • requirements.	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N2912
NOS Name	Employability Skills 000
Sector	Capital Goods
Sub-Sector	
Occupation	Tool & Die Fabrication
NSQF Level	3.5
Credits	4
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

As per QP

Minimum Aggregate Passing % at QP Level : 40

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Minimum Passing % at NOS Level: 40

(**Please note**: A Trainee must score the minimum percentage for each NOS separately as well as on the QP as a whole.)

Assessment Weightage

Compulsory NOS

Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MSME/CSC/N2911.Create & Modify part using higher End software	-	100	-	-	100	10
MSME/CSC/N2910.Create & Modify part using higher End software	-	100	-	-	100	10
MSME/CSC/N2909.Design of Mould	-	100	-	-	100	5
MSME/CSC/N2908.Design of Mould	100	-	-	-	100	5
MSME/CSC/N2907.Assist in Operation of CNC Machine	-	100	-	-	100	5
MSME/CSC/N2906.Design of Press Tool	-	100	-	-	100	5
MSME/CSC/N2905.Design of Press Tool	100	-	-	-	100	5
MSME/CSC/N2904.Use and Application of Engineering Materials	100	-	-	-	100	15
MSME/CSC/N2903.Manufacturing of Tool & Die Parts	-	100	-	-	100	10
MSME/CSC/N2902.Checking dimensions of machined Part	-	100	-	-	100	10
MSME/CSC/N2901.Create Part Drawing using CAD	-	100	-	-	100	10
MSME/CSC/N2912.Employability Skills 000	100	-	-	-	100	10
Total	**400**	**800**	**-**	**-**	**1200**	**100**

Acronyms

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

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.