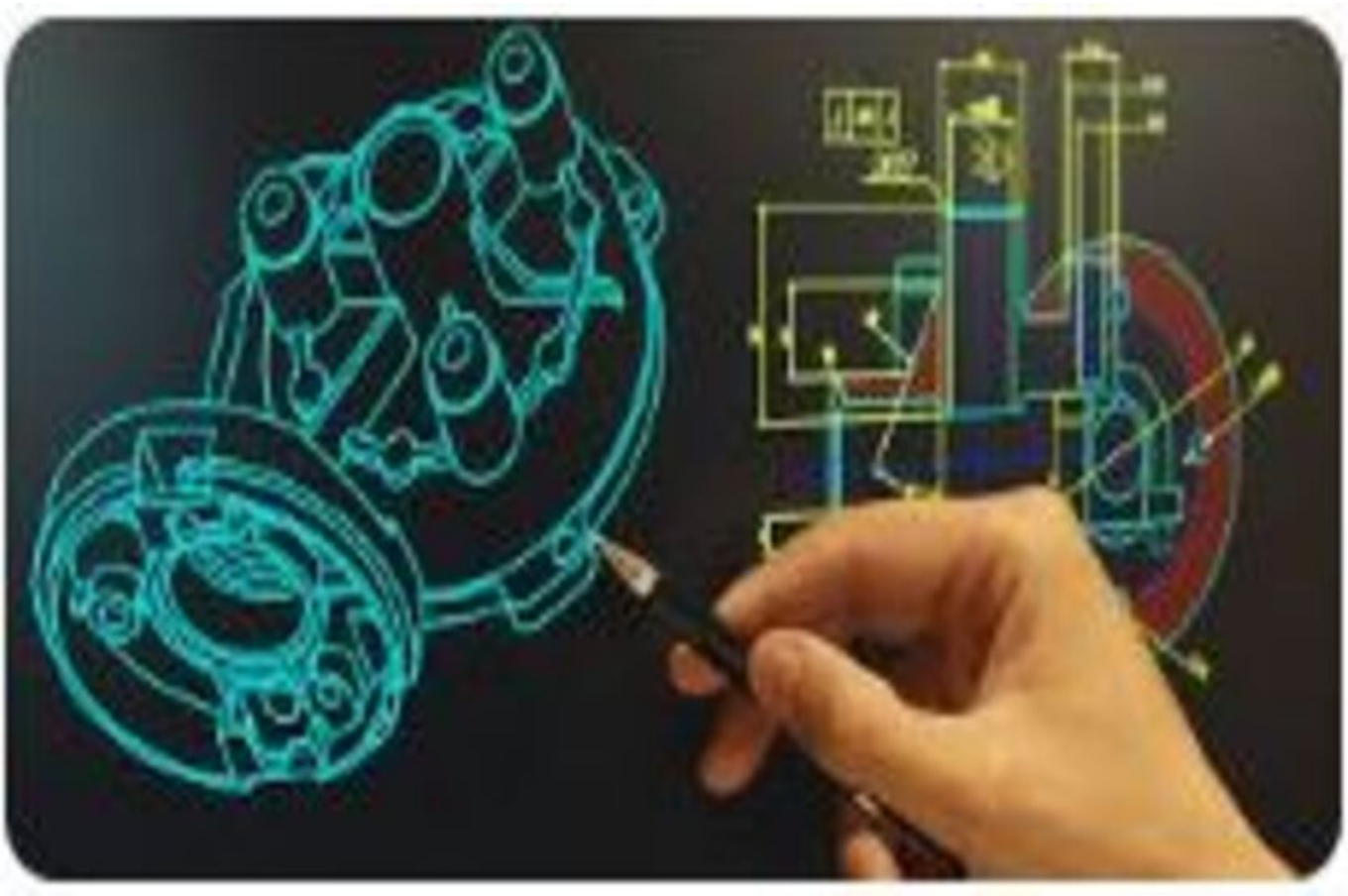
सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

Qualification Pack



JUNIOR DESIGNER CAD/CAM

QP Code: MSME/CSC/Q3001

Version: 1.0

NSQF Level: 4.5

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Contents

Qualification Pack

MSME/CSC/Q3001: JUNIOR DESIGNER CAD/CAM

Brief Job Description

This qualification is designed with multiple modules that equip learners with the essential skills and knowledge required for the role of a CAD/CAM Engineer. Through a structured curriculum, learners will gain expertise in CAD, CAM, and CAE software applications, enabling them to design, simulate, and manufacture engineering components with precision and efficiency.

Personal Attributes

This qualification is designed with multiple modules that equip learners with the essential skills and knowledge required for the role of a CAD/CAM Engineer. Through a structured curriculum, learners will gain expertise in CAD, CAM, and CAE software applications, enabling them to design, simulate, and manufacture engineering components with precision and efficiency.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. MSME/CSC/N3001: Create & Modify Part Model using CAD Software
2. MSME/CSC/N3002: Generate Part Program Using CAM Software (CAM)
3. MSME/CSC/N3003: MSME/MCCCC/03 Analyze Part Model
4. MSME/CSC/N3004: Design Surfaces using Higher end CAD Software
5. MSME/CSC/N3005: Generate CNC Program
6. MSME/CSC/N3006: Generate CNC Program
7. MSME/CSC/N3007: Employability Skills 02
8. MSME/CSC/N3008: OJT-JDCC

Qualification Pack (QP) Parameters

Sector	Capital Goods
Sub-Sector	Machine Tools
Occupation	Designing

Qualification Pack

Country	India
NSQF Level	4.5
Credits	20
Aligned to NCO/ISCO/ISIC Code	Designer Mechanical
Minimum Educational Qualification & Experience	Completed 2nd year of 3-year diploma (after 10th) and pursuing regular diploma (Qualification & Relevant Experience in the field of Mechanical, Production and Automobile Engineering & it's Equivalent.) OR Previous relevant Qualification of NSQF Level (4)
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	17 Years
Last Reviewed On	NA
Next Review Date	30/04/2027
NSQC Approval Date	30/04/2024
Version	1.0
Reference code on NQR	QG-4.5-CG-02404-2024-V1-MSME
NQR Version	1.0

Qualification Pack

MSME/CSC/N3001: Create & Modify Part Model using CAD Software

Description

After completion of course Student should be able to Understand types of different CAD/CAM/CAE software.

Scope

The scope covers the following :

- After completion of course Student should be able to Understand types of different CAD/CAM/CAE software.

Elements and Performance Criteria

MSME/MCCCC/01 Create & Modify Part Model using CAD 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

PC16. • Creating simple parts, assemblies, and drawings establish the responsibilities for developing • specific aspects of the design

PC17. • Develop a schedule for the design process e.g. works order date, plan date, actual completion • date.

PC18. Save and store the design documentation as per organizational guidelines .

PC19. Communicate information to the appropriate people using various company specific media

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/MCCCC/01 Create & Modify Part Model using CAD 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	-	-	-	-
PC16. • Creating simple parts, assemblies, and drawings establish the responsibilities for developing • specific aspects of the design	-	-	-	-
PC17. • Develop a schedule for the design process e.g. works order date, plan date, actual completion • date.	-	-	-	-
PC18. Save and store the design documentation as per organizational guidelines .	-	-	-	-
PC19. Communicate information to the appropriate people using various company specific media	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N3001
NOS Name	Create & Modify Part Model using CAD Software
Sector	Capital Goods
Sub-Sector	
Occupation	Designing
NSQF Level	4.5
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/N3002: Generate Part Program Using CAM Software (CAM)

Description

After completion of course Student should be able to Understand advance Computer aided design software (NX- CAD/CAM) as compare to other CAD software

Scope

The scope covers the following :

- After completion of course Student should be able to Understand advance Computer aided design software (NX- CAD/CAM) as compare to other CAD software

Elements and Performance Criteria

MSME/MCCCC/02 Generate Part Program Using CAM Software (CAM)

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

PC1. Describe various feature in CAD and CAM software.

PC2. Explain about limitation & advantages of each CAD/CAM

PC3. Explain working of CAD/CAM

PC4. Create and Edit 2D geometric sketches by using Unigraphics NX software.

PC5. Develop 3D modeling by using advanced command.

PC6. • Apply assembly constraint & develop different types of assembly design by using CAD Software • like Unigraphics NX

PC7. List the CAM software that is use for Tool Path generation

PC8. Plan the machining activities before starting them.

PC9. Access and use the correct CAM software and tools e.g. Using UG-CAM software

PC10. • Calculate parameters like speed feed, depth of cut etc. And set a references for the various • operations

PC11. Create / import entities in 3D space as per job requirement

PC12. Modify entities in 3D space as per job requirement

PC13. • Create 3-D views on the screen by manipulating drawing planes and inserting 3-D geometric • shapes

PC14. Perform programming for solid modeling

PC15. • Produce a model for export to the following manufacturing systems Manufacturing systems: • DNC (Direct Numerically controlled) /CNC (Computer Numerically controlled) machines; 3D • printer; other specific system

PC16. • Produce CAM program which comply with organizational guidelines; statutory regulations and • codes of practice; CAM software standards; national and international standards

PC17. Confirm that the program is as per job specifications and contains all relevant information

PC18. Use appropriate techniques to create program that are sufficiently and clearly detailed

PC19. Use codes and other references that follow the required conventions

PC20. Make sure that programs are checked and approved by the appropriate person

PC21. Save the program in the appropriate file type and location.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/MCCCC/02 Generate Part Program Using CAM Software (CAM)	-	**100**	-	-
PC1. Describe various feature in CAD and CAM software.	-	-	-	-
PC2. Explain about limitation & advantages of each CAD/CAM	-	-	-	-
PC3. Explain working of CAD/CAM	-	-	-	-
PC4. Create and Edit 2D geometric sketches by using Unigraphics NX software.	-	-	-	-
PC5. Develop 3D modeling by using advanced command.	-	-	-	-
PC6. • Apply assembly constraint & develop different types of assembly design by using CAD Software • like Unigraphics NX	-	-	-	-
PC7. List the CAM software that is use for Tool Path generation	-	-	-	-
PC8. Plan the machining activities before starting them.	-	-	-	-
PC9. Access and use the correct CAM software and tools e.g. Using UG-CAM software	-	-	-	-
PC10. • Calculate parameters like speed feed, depth of cut etc. And set a references for the various • operations	-	-	-	-
PC11. Create / import entities in 3D space as per job requirement	-	-	-	-
PC12. Modify entities in 3D space as per job requirement	-	-	-	-
PC13. • Create 3-D views on the screen by manipulating drawing planes and inserting 3-D geometric • shapes	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. Perform programming for solid modeling	-	-	-	-
PC15. • Produce a model for export to the following manufacturing systems Manufacturing systems: • DNC (Direct Numerically controlled) /CNC (Computer Numerically controlled) machines; 3D • printer; other specific system	-	-	-	-
PC16. • Produce CAM program which comply with organizational guidelines; statutory regulations and • codes of practice; CAM software standards; national and international standards	-	-	-	-
PC17. Confirm that the program is as per job specifications and contains all relevant information	-	-	-	-
PC18. Use appropriate techniques to create program that are sufficiently and clearly detailed	-	-	-	-
PC19. Use codes and other references that follow the required conventions	-	-	-	-
PC20. Make sure that programs are checked and approved by the appropriate person	-	-	-	-
PC21. Save the program in the appropriate file type and location.	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N3002
NOS Name	Generate Part Program Using CAM Software (CAM)
Sector	Capital Goods
Sub-Sector	
Occupation	Designing
NSQF Level	4.5
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/N3003: MSME/MCCCC/03 Analyze Part Model

Description

Understand the need Analysis and need of CAE Software

Scope

The scope covers the following :

- Different file format use in CAE Software

Elements and Performance Criteria

MSME/MCCCC/03 Analyze Part Model

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

PC1. Understand the need Analysis and need of CAE Software
PC2. Different file format use in CAE Software
PC3. Export and Import of different file format in CAE
PC4. Define the different parameter for analysis
PC5. Generate the mesh file
PC6. Define the load and boundary parameter for the CAD model
PC7. Simulate the result
PC8. Validate the result
PC9. Optimize the result
PC10. Generate the macro file for the analysis
PC11. Generate the different types of graphs
PC12. Publish the graphs
PC13. Generate the report.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/MCCCC/03 Analyze Part Model	**-**	**100**	**-**	**-**
PC1. Understand the need Analysis and need of CAE Software	-	-	-	-
PC2. Different file format use in CAE Software	-	-	-	-
PC3. Export and Import of different file format in CAE	-	-	-	-
PC4. Define the different parameter for analysis	-	-	-	-
PC5. Generate the mesh file	-	-	-	-
PC6. Define the load and boundary parameter for the CAD model	-	-	-	-
PC7. Simulate the result	-	-	-	-
PC8. Validate the result	-	-	-	-
PC9. Optimize the result	-	-	-	-
PC10. Generate the macro file for the analysis	-	-	-	-
PC11. Generate the different types of graphs	-	-	-	-
PC12. Publish the graphs	-	-	-	-
PC13. Generate the report.	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N3003
NOS Name	MSME/MCCCC/03 Analyze Part Model
Sector	Capital Goods
Sub-Sector	
Occupation	Designing
NSQF Level	4.5
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/N3004: Design Surfaces using Higher end CAD Software

Description

After completion of course Student should be able to Understand advance Computer aided design software (CREO PARAMETRIC & CATIA) as compare to other CAD software.

Scope

The scope covers the following :

- After completion of course Student should be able to Understand advance Computer aided design software (CREO PARAMETRIC & CATIA) as compare to other CAD software.

Elements and Performance Criteria

MSME/MCCCC/04 Design Surfaces using Higher end CAD Software

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

PC1. • Understand advance Computer aided design software (CREO PARAMETRIC & CATIA) as • compare to other CAD software.

PC2. Create 2D geometric sketches by using CREO PARAMETRIC software.

PC3. Develop 3D solid & surface modeling by using advanced command.

PC4. Design and develop the mechanical component and product.

PC5. Develop complex CAD geometry using high class surfacing

PC6. Understand assembly constraint & develop different types of assembly design

PC7. Understand design generative & interactive drafting.

PC8. Use of CATIA and CREO in sheet metal and Tooling industries

PC9. Apply knowledge in create complicated modeling & creative/innovative solution

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/MCCCC/04 Design Surfaces using Higher end CAD Software	-	**100**	-	-
PC1. • Understand advance Computer aided design software (CREO PARAMETRIC & CATIA) as • compare to other CAD software.	-	-	-	-
PC2. Create 2D geometric sketches by using CREO PARAMETRIC software.	-	-	-	-
PC3. Develop 3D solid & surface modeling by using advanced command.	-	-	-	-
PC4. Design and develop the mechanical component and product.	-	-	-	-
PC5. Develop complex CAD geometry using high class surfacing	-	-	-	-
PC6. Understand assembly constraint & develop different types of assembly design	-	-	-	-
PC7. Understand design generative & interactive drafting.	-	-	-	-
PC8. Use of CATIA and CREO in sheet metal and Tooling industries	-	-	-	-
PC9. Apply knowledge in create complicated modeling & creative/innovative solution	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N3004
NOS Name	Design Surfaces using Higher end CAD Software
Sector	Capital Goods
Sub-Sector	
Occupation	Designing
NSQF Level	4.5
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/N3005: Generate CNC Program

Description

After completion of course Student should be able to Explain applications and advantages of CNC machines and technology

Scope

The scope covers the following :

- After completion of course Student should be able to Explain applications and advantages of CNC machines and technology

Elements and Performance Criteria

MSME/MCCCC/05 Generate CNC Program

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

PC1. Plan the machining activities before starting them.

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.

PC4. Check that all the equipment is correctly connected and in a safe and usable working condition

PC5. • Select Appropriate Raw Material as per size of the Parts to be manufactured mentioned in • drawing and specification

PC6. • Calculate parameters like speed feed, depth of cut etc. and set a references for the various • operations

PC7. Use appropriate techniques to create CNC program that are sufficiently and clearly detailed

PC8. Use codes and other references that follow the required conventions

PC9. Make sure that programs are checked and approved by the appropriate person

PC10. Save the program in the appropriate file type and location

PC11. • Deal promptly and effectively within your control, and seek help and guidance from the • relevant people if you have problems that you cannot resolve

PC12. • Prepare correct programs, demonstrate, simulate and operate CNC lathe / milling / EDM / • WEDM machines for various machining operations.

PC13. Describe and explain Modern CNC systems and explain its importance in manufacturing.

PC14. Execute program and inspect simple geometrical forms / standard parts.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/MCCCC/05 Generate CNC Program	**100**	**-**	**-**	**-**
PC1. Plan the machining activities before starting them.	-	-	-	-
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.	-	-	-	-
PC4. Check that all the equipment is correctly connected and in a safe and usable working condition	-	-	-	-
PC5. • Select Appropriate Raw Material as per size of the Parts to be manufactured mentioned in • drawing and specification	-	-	-	-
PC6. • Calculate parameters like speed feed, depth of cut etc. and set a references for the various • operations	-	-	-	-
PC7. Use appropriate techniques to create CNC program that are sufficiently and clearly detailed	-	-	-	-
PC8. Use codes and other references that follow the required conventions	-	-	-	-
PC9. Make sure that programs are checked and approved by the appropriate person	-	-	-	-
PC10. Save the program in the appropriate file type and location	-	-	-	-
PC11. • Deal promptly and effectively within your control, and seek help and guidance from the • relevant people if you have problems that you cannot resolve	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. • Prepare correct programs, demonstrate, simulate and operate CNC lathe / milling / EDM / • WEDM machines for various machining operations.	-	-	-	-
PC13. Describe and explain Modern CNC systems and explain its importance in manufacturing.	-	-	-	-
PC14. Execute program and inspect simple geometrical forms / standard parts.	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N3005
NOS Name	Generate CNC Program
Sector	Capital Goods
Sub-Sector	
Occupation	Designing
NSQF Level	4.5
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/N3006: Generate CNC Program

Description

After completion of course Student should be able to Explain applications and advantages of CNC machines and technology

Scope

The scope covers the following :

- After completion of course Student should be able to Explain applications and advantages of CNC machines and technology

Elements and Performance Criteria

MSME/MCCCC/05 Generate CNC Program

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

PC1. Plan the machining activities before starting them.

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.

PC4. Check that all the equipment is correctly connected and in a safe and usable working condition

PC5. • Select Appropriate Raw Material as per size of the Parts to be manufactured mentioned in • drawing and specification

PC6. • Calculate parameters like speed feed, depth of cut etc. and set a references for the various • operations

PC7. Use appropriate techniques to create CNC program that are sufficiently and clearly detailed

PC8. Use codes and other references that follow the required conventions

PC9. Make sure that programs are checked and approved by the appropriate person

PC10. Save the program in the appropriate file type and location

PC11. • Deal promptly and effectively within your control, and seek help and guidance from the • relevant people if you have problems that you cannot resolve

PC12. • Prepare correct programs, demonstrate, simulate and operate CNC lathe / milling / EDM / • WEDM machines for various machining operations.

PC13. Describe and explain Modern CNC systems and explain its importance in manufacturing.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/MCCCC/05 Generate CNC Program	-	100	-	-
PC1. Plan the machining activities before starting them.	-	-	-	-
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.	-	-	-	-
PC4. Check that all the equipment is correctly connected and in a safe and usable working condition	-	-	-	-
PC5. • Select Appropriate Raw Material as per size of the Parts to be manufactured mentioned in • drawing and specification	-	-	-	-
PC6. • Calculate parameters like speed feed, depth of cut etc. and set a references for the various • operations	-	-	-	-
PC7. Use appropriate techniques to create CNC program that are sufficiently and clearly detailed	-	-	-	-
PC8. Use codes and other references that follow the required conventions	-	-	-	-
PC9. Make sure that programs are checked and approved by the appropriate person	-	-	-	-
PC10. Save the program in the appropriate file type and location	-	-	-	-
PC11. • Deal promptly and effectively within your control, and seek help and guidance from the • relevant people if you have problems that you cannot resolve	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. • Prepare correct programs, demonstrate, simulate and operate CNC lathe / milling / EDM / • WEDM machines for various machining operations.	-	-	-	-
PC13. Describe and explain Modern CNC systems and explain its importance in manufacturing.	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N3006
NOS Name	Generate CNC Program
Sector	Capital Goods
Sub-Sector	
Occupation	Designing
NSQF Level	4.5
Credits	2
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CSC/N3007: Employability Skills 02

Description

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

Scope

The scope covers the following :

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

Elements and Performance Criteria

MSME/ES/02 Employability skills

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. • Identify employability skills required for jobs in various industries. & Identify and explore • learning and employability portals

PC5. • Recognize the significance of constitutional values, including civic rights and duties, citizenship, • responsibility towards society etc. and personal values and ethics such as honesty, integrity, • caring and respecting others, etc.

PC6. Follow environmentally sustainable practices. & Recognize the significance of 21st Century Skills for employment

PC7. • 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 for continuous learning etc. in personal and • professional life

PC8. • Use basic English for everyday conversation in different contexts, in person and over the • telephone.

PC9. How to Minimize the team conflicts & Explain Ethics & values?

PC10. • Read and understand routine information, notes, instructions, mails, letters etc. written in • English

PC11. • Write short messages, notes, letters, e-mails etc. in English & Understand the difference • between job and career

PC12. • Prepare a career development plan with short- and long-term goals, based on aptitude & • Discuss the main types of electronic funds transfers

PC13. • Follow verbal and non-verbal communication etiquette and active listening techniques in • various settings & work collaboratively with others in a team

PC14. • Communicate and behave appropriately with all genders and PwD & escalate any issues related
• to sexual harassment at workplace according to POSH Act

PC15. • Select financial institutions, products and services as per requirement & carry out offline and
• online financial transactions, safely and securely.

PC16. • Identify common components of salary and compute income, expenses, taxes, investments etc
• & identify relevant rights and laws and use legal aids to fight against legal exploitation

PC17. • Operate digital devices and carry out basic internet operations securely and safely & use e-mail
• and social media platforms and virtual collaboration tools to work effectively

PC18. Use basic features of word processor, spreadsheets, and presentations.

PC19. • Identify different types of Entrepreneurship and Enterprises and assess opportunities for
• potential business through research & develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and
• Promotion

PC20. • Identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the
• potential business opportunity

PC21. • Identify different types of customers & identify and respond to customer requests and needs in
• a professional manner.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/ES/02 Employability skills	**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. • Identify employability skills required for jobs in various industries. & Identify and explore • learning and employability portals	-	-	-	-
PC5. • Recognize the significance of constitutional values, including civic rights and duties, citizenship, • responsibility towards society etc. and personal values and ethics such as honesty, integrity, • caring and respecting others, etc.	-	-	-	-
PC6. Follow environmentally sustainable practices. & Recognize the significance of 21st Century Skills for employment	-	-	-	-
PC7. • 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 for continuous learning etc. in personal and • professional life	-	-	-	-
PC8. • Use basic English for everyday conversation in different contexts, in person and over the • telephone.	-	-	-	-
PC9. How to Minimize the team conflicts & Explain Ethics & values?	-	-	-	-
PC10. • Read and understand routine information, notes, instructions, mails, letters etc. written in • English	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. • Write short messages, notes, letters, e-mails etc. in English & Understand the difference • between job and career	-	-	-	-
PC12. • Prepare a career development plan with short- and long-term goals, based on aptitude & • Discuss the main types of electronic funds transfers	-	-	-	-
PC13. • Follow verbal and non-verbal communication etiquette and active listening techniques in • various settings & work collaboratively with others in a team	-	-	-	-
PC14. • Communicate and behave appropriately with all genders and PwD & escalate any issues related • to sexual harassment at workplace according to POSH Act	-	-	-	-
PC15. • Select financial institutions, products and services as per requirement & carry out offline and • online financial transactions, safely and securely.	-	-	-	-
PC16. • Identify common components of salary and compute income, expenses, taxes, investments etc • & identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
PC17. • Operate digital devices and carry out basic internet operations securely and safely & use e- mail • and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC18. Use basic features of word processor, spreadsheets, and presentations.	-	-	-	-
PC19. • Identify different types of Entrepreneurship and Enterprises and assess opportunities for • potential business through research & develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and • Promotion	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC20. • Identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the • potential business opportunity	-	-	-	-
PC21. • Identify different types of customers & identify and respond to customer requests and needs in • a professional manner.	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N3007
NOS Name	Employability Skills 02
Sector	Capital Goods
Sub-Sector	
Occupation	Designing
NSQF Level	4.5
Credits	2
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CSC/N3008: OJT-JDCC

Description

JrDCC

Scope

The scope covers the following :

- JrDCC

Elements and Performance Criteria

OJT

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

PC1. VIVA-VOCE

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
OJT	-	-	-	100
PC1. VIVA-VOCE	-	-	-	-
NOS Total	-	-	-	100

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CSC/N3008
NOS Name	OJT-JDCC
Sector	Capital Goods
Sub-Sector	
Occupation	Designing
NSQF Level	4.5
Credits	2
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.)

Assessment Weightage

Compulsory NOS

Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MSME/CSC/N3001.Create & Modify Part Model using CAD Software	0	100	0	0	100	20
MSME/CSC/N3002.Generate Part Program Using CAM Software (CAM)	0	100	0	0	100	20
MSME/CSC/N3003.MSME/MCCCC/03 Analyze Part Model	0	100	0	0	100	10
MSME/CSC/N3004.Design Surfaces using Higher end CAD Software	0	100	0	0	100	10
MSME/CSC/N3005.Generate CNC Program	100	0	0	0	100	10
MSME/CSC/N3006.Generate CNC Program	0	100	0	0	100	10
MSME/CSC/N3007.Employability Skills 02	100	0	0	0	100	10
MSME/CSC/N3008.OJT-JDCC	0	0	0	100	100	10
Total	**200**	**500**	**-**	**100**	**800**	**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.