Qualification Pack

PROJECT COORDINATOR (CONSTRUCTION)

QP Code: MSME/CON/Q0901

Version: 1.0

NSQF Level: 5.5

MSME TECHNOLOGY CENTRE ||
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Contents

Qualification Pack

MSME/CON/Q0901: PROJECT COORDINATOR (CONSTRUCTION)

Brief Job Description

Carry out structural planning & designing, interior & exterior designing.

Personal Attributes

Carry out structural planning & designing, interior & exterior designing.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. MSME/CON/N0909: Intro to surveying, leveling, types, GPS/DGPS function & uses
2. MSME/CON/N0908: Intro to surveying, leveling, types, GPS/DGPS function & uses.
3. MSME/CON/N0921: Explain Material Testing equipment for soil, aggreg
4. MSME/CON/N0910: EmployabilitySkills 01
5. MSME/CON/N0922: OJT 02
6. MSME/CON/N0920: 2D/3D drafting including road C-section/I-section design, estimation.
7. MSME/CON/N0919: 2D/3D drafting including road C-section/I-section design, estimation.
8. MSME/CON/N0918: Demonstrate the project, planning, & scheduling by using primavera
9. MSME/CON/N0917: Demonstrate the project, planning, & scheduling by using primavera
10. MSME/CON/N0916: Create types of topographical map through Arc-GIS software.
11. MSME/CON/N0915: Create types of topographical map through Arc-GIS software.
12. MSME/CON/N0914: Demonstrate Tekla for steel, /concrete structure & bridge design with load application.
13. MSME/CON/N0913: Demonstrate Tekla for steel, /concrete structure & bridge design with load application.
14. MSME/CON/N0912: Carry out Architectural modeling, exterior and interior, render, and animation with Revit detailing.
15. MSME/CON/N0911: Carry out Architectural modeling, exterior and interior, render, and animation with Revit detailing.

16. MSME/CON/N0907: Estimation of building with rate analysis of civil works.

17. MSME/CON/N0906: Design exterior and interior, render, animation with 3DS Max & sketch up, create Color & shadow in Photoshop

18. MSME/CON/N0905: Design exterior and interior, render, animation with 3DS Max & sketch up, create Color & shadow in Photoshop

19. MSME/CON/N0904: Analysis of structure & foundation with IS Code

20. MSME/CON/N0903: Analysis of structure & foundation with IS Code

21. MSME/CON/N0902: Sketch Architectural drawings, section view, 3D View

22. MSME/CON/N0901: Sketch Architectural drawings, section view, 3D View

Qualification Pack (QP) Parameters

Sector	Construction
Sub-Sector	Construction
Occupation	Project Management 01 (Structural Design and Analysis)
Country	India
NSQF Level	5.5
Credits	40
Aligned to NCO/ISCO/ISIC Code	2142.0300 (Civil Engineer, Structural)
Minimum Educational Qualification & Experience	Pursuing 3rd year of 3-year diploma after 10th (3 year diploma in Civil Engineering or equivalent after 10th Grade) with 1.5 years of experience OR Pursuing 2nd year of UG (2nd year of B.E/ B. Tech (Civil Engineering)) with NA of experience
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA

Qualification Pack

Next Review Date	30/04/2027
NSQC Approval Date	30/04/2024
Version	1.0
Reference code on NQR	NCVET- QG-5.5-CO-02392-2024-V1-MSME
NQR Version	1.0

MSME/CON/N0909: Intro to surveying, leveling, types, GPS/DGPS function & uses

Description

Definition of surveying, classification based upon the nature of the field survey.

Scope

The scope covers the following :

- Definition of surveying, classification based upon the nature of the field survey.

Elements and Performance Criteria

MSME/PDSPM/05 Intro to surveying, leveling, types, GPS/DGPS function & uses.

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

PC1. • Do operational panel & other plants of the instruments with the help of • machine in field.

PC2. • Do centering with the optical plummet eye piece as per procedure with the • leaser plummet, do leveling of the circle level with the help of machine.

PC3. • Do Job selection, Job Details, Job detection, Station orientation of points by • help of machine

PC4. • Shift the instrument from one station to another station & Download Data. • Process data in computer, transfer format to • CSV, DWG & DXF with Specter link software.

PC5. Do leveling &surveying

PC6. • Perform different operations using auto level and calculate various • parameters.

PC7. • Perform rise and fall method, error correction& do Fly leveling, profile • leveling, simple leveling.

PC8. • Identify main segments used for navigation &Differentiate between the • mobile GPS & GPS instrument.

PC9. Measure the point-to-point distance using GPS device through satellite.

PC10. • Do the GPS work in survey. Solve the common errors of GPS survey • &Principles of GPS device.

PC11. • Do the work in static mode and Kinematic Mode.Do the TRCM correction, • ATOM correction, RTK correction &Correlating Base, Rover data formation of base • line, & Report preparation

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/05 Intro to surveying, leveling, types, GPS/DGPS function & uses.	-	100	-	-
PC1. • Do operational panel & other plants of the instruments with the help of • machine in field.	-	-	-	-
PC2. • Do centering with the optical plummet eye piece as per procedure with the • leaser plummet, do leveling of the circle level with the help of machine.	-	-	-	-
PC3. • Do Job selection, Job Details, Job detection, Station orientation of points by • help of machine	-	-	-	-
PC4. • Shift the instrument from one station to another station & Download Data. • Process data in computer, transfer format to • CSV, DWG & DXF with Specter link software.	-	-	-	-
PC5. Do leveling &surveying	-	-	-	-
PC6. • Perform different operations using auto level and calculate various • parameters.	-	-	-	-
PC7. • Perform rise and fall method, error correction& do Fly leveling, profile • leveling, simple leveling.	-	-	-	-
PC8. • Identify main segments used for navigation &Differentiate between the • mobile GPS & GPS instrument.	-	-	-	-
PC9. Measure the point-to-point distance using GPS device through satellite.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. • Do the GPS work in survey. Solve the common errors of GPS survey • &Principles of GPS device.	-	-	-	-
PC11. • Do the work in static mode and Kinematic Mode.Do the TRCM correction, • ATOM correction, RTK correction &Correlating Base, Rover data formation of base • line, & Report preparation	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0909
NOS Name	Intro to surveying, leveling, types, GPS/DGPS function & uses
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	2
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0908: Intro to surveying, leveling, types, GPS/DGPS function & uses.

Description

Definition of surveying, classification based upon the nature of the field survey.

Scope

The scope covers the following :

- Definition of surveying, classification based upon the nature of the field survey.

Elements and Performance Criteria

MSME/PDSPM/05 Intro to surveying, leveling, types, GPS/DGPS function & uses.

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

PC1. • Do operational panel & other plants of the instruments with the help of • machine in field.

PC2. • Do centering with the optical plummet eye piece as per procedure with the • leaser plummet, do leveling of the circle level with the help of machine.

PC3. • Do Job selection, Job Details, Job detection, Station orientation of points by • help of machine

PC4. • Shift the instrument from one station to another station & Download Data. • Process data in computer, transfer format to • CSV, DWG & DXF with Specter link software.

PC5. Do leveling &surveying

PC6. • Perform different operations using auto level and calculate various • parameters.

PC7. • Perform rise and fall method, error correction& do Fly leveling, profile • leveling, simple leveling.

PC8. • Identify main segments used for navigation &Differentiate between the • mobile GPS & GPS instrument.

PC9. Measure the point-to-point distance using GPS device through satellite.

PC10. • Do the GPS work in survey. Solve the common errors of GPS survey • &Principles of GPS device.

PC11. • Do the work in static mode and Kinematic Mode.Do the TRCM correction, • ATOM correction, RTK correction &Correlating Base, Rover data formation of base • line, & Report preparation

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/05 Intro to surveying, leveling, types, GPS/DGPS function & uses.	**100**	**-**	**-**	**-**
PC1. • Do operational panel & other plants of the instruments with the help of • machine in field.	-	-	-	-
PC2. • Do centering with the optical plummet eye piece as per procedure with the • leaser plummet, do leveling of the circle level with the help of machine.	-	-	-	-
PC3. • Do Job selection, Job Details, Job detection, Station orientation of points by • help of machine	-	-	-	-
PC4. • Shift the instrument from one station to another station & Download Data. • Process data in computer, transfer format to • CSV, DWG & DXF with Specter link software.	-	-	-	-
PC5. Do leveling &surveying	-	-	-	-
PC6. • Perform different operations using auto level and calculate various • parameters.	-	-	-	-
PC7. • Perform rise and fall method, error correction& do Fly leveling, profile • leveling, simple leveling.	-	-	-	-
PC8. • Identify main segments used for navigation &Differentiate between the • mobile GPS & GPS instrument.	-	-	-	-
PC9. Measure the point-to-point distance using GPS device through satellite.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. • Do the GPS work in survey. Solve the common errors of GPS survey • &Principles of GPS device.	-	-	-	-
PC11. • Do the work in static mode and Kinematic Mode.Do the TRCM correction, • ATOM correction, RTK correction &Correlating Base, Rover data formation of base • line, & Report preparation	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0908
NOS Name	Intro to surveying, leveling, types, GPS/DGPS function & uses.
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	1
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0921: Explain Material Testing equipment for soil, aggreg

Description

Explain Different Material Testing Equipments

Scope

The scope covers the following :

- Explain Different Material Testing Equipments

Elements and Performance Criteria

MSME/PDSPM/11 Explain Material Testing equipment for soil, aggregate, bitumen and steel.

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

PC1. Different types of Instruments used for Testing Building Materials.

PC2. • Moisture content test, Atterberg limits tests, Specific gravity of soil, Dry
• density of soil, Compaction test (Proctor's test)

PC3. • Penetration test, Ductility test, Softening point test, Specific gravity test,
• Viscosity test, Flash and Fire point test, Float test, Water content test, Loss on
• heating test

PC4. Tensile test, Compression test

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/11 Explain Material Testing equipment for soil, aggregate, bitumen and steel.	**100**	**-**	**-**	**-**
PC1. Different types of Instruments used for Testing Building Materials.	-	-	-	-
PC2. • Moisture content test, Atterberg limits tests, Specific gravity of soil, Dry • density of soil, Compaction test (Proctor's test)	-	-	-	-
PC3. • Penetration test, Ductility test, Softening point test, Specific gravity test, • Viscosity test, Flash and Fire point test, Float test, Water content test, Loss on • heating test	-	-	-	-
PC4. Tensile test, Compression test	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0921
NOS Name	Explain Material Testing equipment for soil, aggreg
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	3
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0910: EmployabilitySkills 01

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/04 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.

PC22. Follow appropriate hygiene and grooming standards

PC23. • Create a professional Curriculum vitae (Résumé) & search for suitable jobs
• using reliable offline and online sources such as Employment exchange,
• recruitment agencies, newspapers etc. and job portals, respectively

PC24. • Apply to identified job openings using offline /online methods as per
• requirement & answer questions politely, with clarity and confidence, during
• recruitment and selection

PC25. • 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/04 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	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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.	-	-	-	-
PC22. Follow appropriate hygiene and grooming standards	-	-	-	-
PC23. • Create a professional Curriculum vitae (Résumé) & search for suitable jobs • using reliable offline and online sources such as Employment exchange, • recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC24. • Apply to identified job openings using offline /online methods as per • requirement & answer questions politely, with clarity and confidence, during • recruitment and selection	-	-	-	-
PC25. • identify apprenticeship opportunities and register for it as per guidelines • and requirements	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0910
NOS Name	EmployabilitySkills 01
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	4
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0922: OJT 02

Description

on job trainee

Scope

The scope covers the following :

- on job trainee

Elements and Performance Criteria

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

PC1. on the basis of report

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	-	**-**	**-**	**100**
PC1. on the basis of report	-	-	-	100
NOS Total	**-**	**-**	**-**	**100**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0922
NOS Name	OJT 02
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	4
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0920: 2D/3D drafting including road C-section/I-section design, estimation.

Description

Demonstrate use of CAD in Civil surveying, basic knowledge of operating software & commands, and benefit of civil developments in the surveying process.

Scope

The scope covers the following :

- Demonstrate use of CAD in Civil surveying, basic knowledge of operating software & commands, and benefit
- of civil developments in the surveying process.

Elements and Performance Criteria

MSME/PDSPM/10 2D/3D drafting including road Csection/I-section design, estimation.

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

PC1. • Analyses the user interface and history of auto plotter software, Introduction
• of Infycons soft. Pvt. Ltd, & How to open the software.

PC2. • Work with File Menu Bar, Config. menu bar, Edit menu bar, View menu bar,
• Draw menu bar, Tool menu bar, Data Menu Bar, DTM Menu Bar, Section Menu Bar,
• Design Menu Bar, Cogo Menu Bar Do the file Import from surveying instrument to
• excel file format. Generate the data setting & create symbols.

PC3. • Make the 2D and 3D contours & create L-section & C- section. Finding volume
• between a dtm surface and datum by terrain volume by section.Finding volume
• between a dtm surface and datum by terrain volume by dtm

PC4. • Analyses Road section, Road alignment, About change in road, Work with
• main menu bars, Data menu bar, Standard menu bar, Draw menu bar, Snap menu
• bar, Dimension menu bar, Edit menu bar & Report menu bar

PC5. • Make Road section C, L-section, & Report of detailed estimation With hard
• copy.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/10 2D/3D drafting including road Csection/I-section design, estimation.	-	**100**	-	-
PC1. • Analyses the user interface and history of auto plotter software, Introduction • of Infycons soft. Pvt. Ltd, & How to open the software.	-	-	-	-
PC2. • Work with File Menu Bar, Config. menu bar, Edit menu bar, View menu bar, • Draw menu bar, Tool menu bar, Data Menu Bar, DTM Menu Bar, Section Menu Bar, • Design Menu Bar, Cogo Menu Bar Do the file Import from surveying instrument to • excel file format. Generate the data setting & create symbols.	-	-	-	-
PC3. • Make the 2D and 3D contours & create L-section & C- section. Finding volume • between a dtm surface and datum by terrain volume by section.Finding volume • between a dtm surface and datum by terrain volume by dtm	-	-	-	-
PC4. • Analyses Road section, Road alignment, About change in road, Work with • main menu bars, Data menu bar, Standard menu bar, Draw menu bar, Snap menu • bar, Dimension menu bar, Edit menu bar & Report menu bar	-	-	-	-
PC5. • Make Road section C, L-section, & Report of detailed estimation With hard • copy.	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0920
NOS Name	2D/3D drafting including road C-section/I-section design, estimation.
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	2
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0919: 2D/3D drafting including road C-section/I-section design, estimation.

Description

Demonstrate use of CAD in Civil surveying, basic knowledge of operating software & commands, and benefit of civil developments in the surveying process.

Scope

The scope covers the following :

- Demonstrate use of CAD in Civil surveying, basic knowledge of operating software & commands, and benefit
- of civil developments in the surveying process.

Elements and Performance Criteria

MSME/PDSPM/10 2D/3D drafting including road Csection/I-section design, estimation.

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

PC1. • Analyses the user interface and history of auto plotter software, Introduction
• of Infycons soft. Pvt. Ltd, & How to open the software.

PC2. • Work with File Menu Bar, Config. menu bar, Edit menu bar, View menu bar,
• Draw menu bar, Tool menu bar, Data Menu Bar, DTM Menu Bar, Section Menu Bar,
• Design Menu Bar, Cogo Menu Bar Do the file Import from surveying instrument to
• excel file format. Generate the data setting & create symbols.

PC3. • Make the 2D and 3D contours & create L-section & C- section. Finding volume
• between a dtm surface and datum by terrain volume by section.Finding volume
• between a dtm surface and datum by terrain volume by dtm

PC4. • Analyses Road section, Road alignment, About change in road, Work with
• main menu bars, Data menu bar, Standard menu bar, Draw menu bar, Snap menu
• bar, Dimension menu bar, Edit menu bar & Report menu bar

PC5. • Make Road section C, L-section, & Report of detailed estimation With hard
• copy.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/10 2D/3D drafting including road Csection/I-section design, estimation.	**100**	**-**	**-**	**-**
PC1. • Analyses the user interface and history of auto plotter software, Introduction • of Infycons soft. Pvt. Ltd, & How to open the software.	-	-	-	-
PC2. • Work with File Menu Bar, Config. menu bar, Edit menu bar, View menu bar, • Draw menu bar, Tool menu bar, Data Menu Bar, DTM Menu Bar, Section Menu Bar, • Design Menu Bar, Cogo Menu Bar Do the file Import from surveying instrument to • excel file format. Generate the data setting & create symbols.	-	-	-	-
PC3. • Make the 2D and 3D contours & create L-section & C- section. Finding volume • between a dtm surface and datum by terrain volume by section.Finding volume • between a dtm surface and datum by terrain volume by dtm	-	-	-	-
PC4. • Analyses Road section, Road alignment, About change in road, Work with • main menu bars, Data menu bar, Standard menu bar, Draw menu bar, Snap menu • bar, Dimension menu bar, Edit menu bar & Report menu bar	-	-	-	-
PC5. • Make Road section C, L-section, & Report of detailed estimation With hard • copy.	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0919
NOS Name	2D/3D drafting including road C-section/I-section design, estimation.
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	1
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0918: Demonstrate the project, planning, & scheduling by using primavera

Description

Demonstrate the concept of project, planning, & scheduling by using primavera software & determining the types of relationships, calendar & activities etc.

Scope

The scope covers the following :

- Demonstrate the concept of project, planning, & scheduling by using primavera software & determining the
- types of relationships, calendar & activities etc.

Elements and Performance Criteria

MSME/PDSPM/09 Demonstrate the project, planning, & scheduling by using primavera

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

PC1. • Analyze basic of primavera & basic navigation and operation. Do Project
• planning, Scheduling, activity, resource codes, calendar, step templates,
• resource (labor/non labor/ material), & cost account structure.

PC2. • Create schedule updates & developing and formatting schedules. Do the
• work brake down structure, deferent activities, critical path analysis,
• resource management & cost management.

PC3. • Understand reviewing baseline schedules, update schedules, Time impact
• analysis & the scope of work, contractual start and finish date of the project. Do the
• major milestones of project & deliverables of various disciplines. Establishing the
• progress measurement weightages for phase/disciplines and activates

PC4. • Get the schedules from disciplines, planning recourse required for the
• project.
• Getting the baseline schedule sign off from the customer & preparation of S-curve
• for engineering, procurement, construction and commissioning and overall.
• Prepare weekly & monthly progress reports & submit progress reports to top
• managements. Prepare delay analysis and present to all concerned discipline
• manager & managements or coordinate among construction and commissioning
• team.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/09 Demonstrate the project, planning, & scheduling by using primavera	-	**100**	-	-
PC1. • Analyze basic of primavera & basic navigation and operation. Do Project • planning, Scheduling, activity, resource codes, calendar, step templates, • resource (labor/non labor/ material), & cost account structure.	-	-	-	-
PC2. • Create schedule updates & developing and formatting schedules. Do the • work brake down structure, deferent activities, critical path analysis, • resource management & cost management.	-	-	-	-
PC3. • Understand reviewing baseline schedules, update schedules, Time impact • analysis & the scope of work, contractual start and finish date of the project. Do the • major milestones of project & deliverables of various disciplines. Establishing the • progress measurement weightages for phase/disciplines and activates	-	-	-	-
PC4. • Get the schedules from disciplines, planning recourse required for the • project. • Getting the baseline schedule sign off from the customer & preparation of S-curve • for engineering, procurement, construction and commissioning and overall. • Prepare weekly & monthly progress reports & submit progress reports to top • managements. Prepare delay analysis and present to all concerned discipline • manager & managements or coordinate among construction and commissioning • team.	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0918
NOS Name	Demonstrate the project, planning, & scheduling by using primavera
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	2
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0917: Demonstrate the project, planning, & scheduling by using primavera

Description

Demonstrate the concept of project, planning, & scheduling by using primavera software & determining the types of relationships, calendar & activities etc.

Scope

The scope covers the following :

- Demonstrate the concept of project, planning, & scheduling by using primavera software & determining the
- types of relationships, calendar & activities etc.

Elements and Performance Criteria

MSME/PDSPM/09 Demonstrate the project, planning, & scheduling by using primavera

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

PC1. • Analyze basic of primavera & basic navigation and operation. Do Project
• planning, Scheduling, activity, resource codes, calendar, step templates,
• resource (labor/non labor/ material), & cost account structure.

PC2. • Create schedule updates & developing and formatting schedules. Do the
• work brake down structure, deferent activities, critical path analysis,
• resource management & cost management.

PC3. • Understand reviewing baseline schedules, update schedules, Time impact
• analysis & the scope of work, contractual start and finish date of the project. Do the
• major milestones of project & deliverables of various disciplines. Establishing the
• progress measurement weightages for phase/disciplines and activates

PC4. • Get the schedules from disciplines, planning recourse required for the
• project.
• Getting the baseline schedule sign off from the customer & preparation of S-curve
• for engineering, procurement, construction and commissioning and overall.
• Prepare weekly & monthly progress reports & submit progress reports to top
• managements. Prepare delay analysis and present to all concerned discipline
• manager & managements or coordinate among construction and commissioning
• team.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/09 Demonstrate the project, planning, & scheduling by using primavera	**100**	**-**	**-**	**-**
PC1. • Analyze basic of primavera & basic navigation and operation. Do Project • planning, Scheduling, activity, resource codes, calendar, step templates, • resource (labor/non labor/ material), & cost account structure.	-	-	-	-
PC2. • Create schedule updates & developing and formatting schedules. Do the • work brake down structure, deferent activities, critical path analysis, • resource management & cost management.	-	-	-	-
PC3. • Understand reviewing baseline schedules, update schedules, Time impact • analysis & the scope of work, contractual start and finish date of the project. Do the • major milestones of project & deliverables of various disciplines. Establishing the • progress measurement weightages for phase/disciplines and activates	-	-	-	-
PC4. • Get the schedules from disciplines, planning recourse required for the • project. • Getting the baseline schedule sign off from the customer & preparation of S-curve • for engineering, procurement, construction and commissioning and overall. • Prepare weekly & monthly progress reports & submit progress reports to top • managements. Prepare delay analysis and present to all concerned discipline • manager & managements or coordinate among construction and commissioning • team.	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0917
NOS Name	Demonstrate the project, planning, & scheduling by using primavera
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	1
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0916: Create types of topographical map through Arc-GIS software.

Description

Create & share different types of topographical map, classify symbolize and label map features, create and edit geographic data and designing high quality map & reports through Arc-GIS software.

Scope

The scope covers the following :

- Create & share different types of topographical map, classify symbolize and label map features, create and
- edit geographic data and designing high quality map & reports through Arc-GIS software.

Elements and Performance Criteria

MSME/PDSPM/08 Create types of topographical map through Arc-GIS software.

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

PC1. • Analyze the Type of remote sensing, Historical prospective in Remote sensing
• Advantages and dis-advantages.Do multi station images, multi band images, date
• images , stage images, Multi Polarization images Multi Enhancement images, MultiDisciplinary Analysis.

PC2. • Do the Electromagnetic Radiation with the help of remote sensing machine.
• Mode to Transfer of Energy in EMR.

PC3. • Analyze the GIS and its definition, & understand Why GIS.Component and
• hardware requirement.

PC4. • Work with different satellite & Import different satellite imagery data,
• Digitization of import data & Analysis, preparation of final reports.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/08 Create types of topographical map through Arc-GIS software.	-	100	-	-
PC1. • Analyze the Type of remote sensing, Historical prospective in Remote sensing • Advantages and dis-advantages.Do multi station images, multi band images, date • images , stage images, Multi Polarization images Multi Enhancement images, MultiDisciplinary Analysis.	-	-	-	-
PC2. • Do the Electromagnetic Radiation with the help of remote sensing machine. • Mode to Transfer of Energy in EMR.	-	-	-	-
PC3. • Analyze the GIS and its definition, & understand Why GIS.Component and • hardware requirement.	-	-	-	-
PC4. • Work with different satellite & Import different satellite imagery data, • Digitization of import data & Analysis, preparation of final reports.	-	-	-	-
NOS Total	-	100	-	-

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0916
NOS Name	Create types of topographical map through Arc-GIS software.
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	2
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

Qualification Pack

MSME/CON/N0915: Create types of topographical map through Arc-GIS software.

Description

Create & share different types of topographical map, classify symbolize and label map features, create and edit geographic data and designing high quality map & reports through Arc-GIS software.

Scope

The scope covers the following :

- Create & share different types of topographical map, classify symbolize and label map features, create and
- edit geographic data and designing high quality map & reports through Arc-GIS software.

Elements and Performance Criteria

MSME/PDSPM/08 Create types of topographical map through Arc-GIS software.

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

PC1. • Analyze the Type of remote sensing, Historical prospective in Remote sensing
• Advantages and dis-advantages.Do multi station images, multi band images, date
• images , stage images, Multi Polarization images Multi Enhancement images, MultiDisciplinary Analysis.

PC2. • Do the Electromagnetic Radiation with the help of remote sensing machine.
• Mode to Transfer of Energy in EMR.

PC3. • Analyze the GIS and its definition, & understand Why GIS.Component and
• hardware requirement.

PC4. • Work with different satellite & Import different satellite imagery data,
• Digitization of import data & Analysis, preparation of final reports.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/08 Create types of topographical map through Arc-GIS software.	**100**	**-**	**-**	**-**
PC1. • Analyze the Type of remote sensing, Historical prospective in Remote sensing • Advantages and dis-advantages.Do multi station images, multi band images, date • images , stage images, Multi Polarization images Multi Enhancement images, MultiDisciplinary Analysis.	-	-	-	-
PC2. • Do the Electromagnetic Radiation with the help of remote sensing machine. • Mode to Transfer of Energy in EMR.	-	-	-	-
PC3. • Analyze the GIS and its definition, & understand Why GIS.Component and • hardware requirement.	-	-	-	-
PC4. • Work with different satellite & Import different satellite imagery data, • Digitization of import data & Analysis, preparation of final reports.	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0915
NOS Name	Create types of topographical map through Arc-GIS software.
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	1
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0914: Demonstrate Tekla for steel, /concrete structure & bridge design with load application.

Description

Demonstrate Tekla, & its uses. Do frame structure, steel structure & applying properties, loads, shear force and bending moment. Do design of steel, /concrete structure & bridge design.

Scope

The scope covers the following :

- Demonstrate Tekla, & its uses. Do frame structure, steel structure & applying properties, loads, shear force and
- bending moment. Do design of steel, /concrete structure & bridge design.

Elements and Performance Criteria

MSME/PDSPM/07 Demonstrate Tekla for steel, /concrete structure & bridge design with load application.

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

PC1. • Analyses the different design methods like Working Stress Design (WSD),
• Ultimate load designed method, &Limit State Method.

PC2. Make a diagram Design of loads, safety factor for loads

PC3. • Designed strength, &Assumption made in limit state method.Make a beam
• design & detailing using in limit state design methods

PC4. • Do the slab design, slab detailing, column design & detailing, footing design &
• detailing in deferent ways and methods.

PC5. • Calculate the coordinate system manually in paper & using that coordinate
• points create frame structure & steel structure in Tekla software.

PC6. • Operate feeding of the co-ordinates in Tekla & using .Use Auto-CAD software
• to transfer the file from Auto-CAD to Tekla (using ID point system).

PC7. Prepare water tank ,form the transmission tower, Generate truss in Tekla

PC8. • Use property option to define material over the structure, Define different
• shapes
• Ex: - Circle, Rectangle, Tee, Trapezoidal. Use group option, Assign material over the
• structure, and define Angie, s-shape, channel, pipe section for steel structure.
• Manually find out structure, Dead & Live loads Ex: - slab weight, wall weight,
• column weight, beam weight, live loads& using I.S codes to calculate basic wind
• speed & pressure, according to the different region by manually. Apply the
• calculated press

PC9. • Generate concrete parameters to design column, beam & slab by using IS 456
• code. Use Tekla to get elaborated details of beam, column & get working drawings
• from Auto-CAD. Use Tekla to define various types of beams such as, simple
• supported beam, fixed beam, cantilever beam, overhanging beam, continuous
• beam & different types of supports.

PC10. • Use Tekla to design steel structures Ex. tower, truss & find out the
• eligible members. Use the surface panel models to design shear walls(RC
• wall)using lift room Including practice & foundation to design, pile, mat,
• isolated, combined footings.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/07 Demonstrate Tekla for steel, /concrete structure & bridge design with load application.	-	100	-	-
PC1. • Analyses the different design methods like Working Stress Design (WSD), • Ultimate load designed method, &Limit State Method.	-	-	-	-
PC2. Make a diagram Design of loads, safety factor for loads	-	-	-	-
PC3. • Designed strength, &Assumption made in limit state method.Make a beam • design & detailing using in limit state design methods	-	-	-	-
PC4. • Do the slab design, slab detailing, column design & detailing, footing design & • detailing in deferent ways and methods.	-	-	-	-
PC5. • Calculate the coordinate system manually in paper & using that coordinate • points create frame structure & steel structure in Tekla software.	-	-	-	-
PC6. • Operate feeding of the co-ordinates in Tekla & using .Use Auto-CAD software • to transfer the file from Auto-CAD to Tekla (using ID point system).	-	-	-	-
PC7. Prepare water tank ,form the transmission tower, Generate truss in Tekla	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. • Use property option to define material over the structure, Define different • shapes • Ex: - Circle, Rectangle, Tee, Trapezoidal. Use group option, Assign material over the • structure, and define Angie, s-shape, channel, pipe section for steel structure. • Manually find out structure, Dead & Live loads Ex: - slab weight, wall weight, • column weight, beam weight, live loads& using I.S codes to calculate basic wind • speed & pressure, according to the different region by manually. Apply the • calculated press	-	-	-	-
PC9. • Generate concrete parameters to design column, beam & slab by using IS 456 • code. Use Tekla to get elaborated details of beam, column & get working drawings • from Auto-CAD. Use Tekla to define various types of beams such as, simple • supported beam, fixed beam, cantilever beam, overhanging beam, continuous • beam & different types of supports.	-	-	-	-
PC10. • Use Tekla to design steel structures Ex. tower, truss & find out the • eligible members. Use the surface panel models to design shear walls(RC • wall)using lift room Including practice & foundation to design, pile, mat, • isolated, combined footings.	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0914
NOS Name	Demonstrate Tekla for steel, /concrete structure & bridge design with load application.
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	2
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0913: Demonstrate Tekla for steel, /concrete structure & bridge design with load application.

Description

Demonstrate Tekla, & its uses. Do frame structure, steel structure & applying properties, loads, shear force and bending moment. Do design of steel, /concrete structure & bridge design.

Scope

The scope covers the following :

- Demonstrate Tekla, & its uses. Do frame structure, steel structure & applying properties, loads, shear force and
- bending moment. Do design of steel, /concrete structure & bridge design.

Elements and Performance Criteria

MSME/PDSPM/07 Demonstrate Tekla for steel, /concrete structure & bridge design with load application.

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

PC1. • Analyses the different design methods like Working Stress Design (WSD),
• Ultimate load designed method, &Limit State Method.

PC2. Make a diagram Design of loads, safety factor for loads

PC3. • Designed strength, &Assumption made in limit state method.Make a beam
• design & detailing using in limit state design methods

PC4. • Do the slab design, slab detailing, column design & detailing, footing design &
• detailing in deferent ways and methods.

PC5. • Calculate the coordinate system manually in paper & using that coordinate
• points create frame structure & steel structure in Tekla software.

PC6. • Operate feeding of the co-ordinates in Tekla & using .Use Auto-CAD software
• to transfer the file from Auto-CAD to Tekla (using ID point system).

PC7. Prepare water tank ,form the transmission tower, Generate truss in Tekla

PC8. • Use property option to define material over the structure, Define different
• shapes
• Ex: - Circle, Rectangle, Tee, Trapezoidal. Use group option, Assign material over the
• structure, and define Angie, s-shape, channel, pipe section for steel structure.
• Manually find out structure, Dead & Live loads Ex: - slab weight, wall weight,
• column weight, beam weight, live loads& using I.S codes to calculate basic wind
• speed & pressure, according to the different region by manually. Apply the
• calculated press

PC9. • Generate concrete parameters to design column, beam & slab by using IS 456
• code. Use Tekla to get elaborated details of beam, column & get working drawings
• from Auto-CAD. Use Tekla to define various types of beams such as, simple
• supported beam, fixed beam, cantilever beam, overhanging beam, continuous
• beam & different types of supports.

PC10. • Use Tekla to design steel structures Ex. tower, truss & find out the
• eligible members. Use the surface panel models to design shear walls(RC
• wall)using lift room Including practice & foundation to design, pile, mat,
• isolated, combined footings.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/07 Demonstrate Tekla for steel, /concrete structure & bridge design with load application.	**100**	**-**	**-**	**-**
PC1. • Analyses the different design methods like Working Stress Design (WSD), • Ultimate load designed method, &Limit State Method.	-	-	-	-
PC2. Make a diagram Design of loads, safety factor for loads	-	-	-	-
PC3. • Designed strength, &Assumption made in limit state method.Make a beam • design & detailing using in limit state design methods	-	-	-	-
PC4. • Do the slab design, slab detailing, column design & detailing, footing design & • detailing in deferent ways and methods.	-	-	-	-
PC5. • Calculate the coordinate system manually in paper & using that coordinate • points create frame structure & steel structure in Tekla software.	-	-	-	-
PC6. • Operate feeding of the co-ordinates in Tekla & using .Use Auto-CAD software • to transfer the file from Auto-CAD to Tekla (using ID point system).	-	-	-	-
PC7. Prepare water tank ,form the transmission tower, Generate truss in Tekla	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. • Use property option to define material over the structure, Define different • shapes • Ex: - Circle, Rectangle, Tee, Trapezoidal. Use group option, Assign material over the • structure, and define Angie, s-shape, channel, pipe section for steel structure. • Manually find out structure, Dead & Live loads Ex: - slab weight, wall weight, • column weight, beam weight, live loads& using I.S codes to calculate basic wind • speed & pressure, according to the different region by manually. Apply the • calculated press	-	-	-	-
PC9. • Generate concrete parameters to design column, beam & slab by using IS 456 • code. Use Tekla to get elaborated details of beam, column & get working drawings • from Auto-CAD. Use Tekla to define various types of beams such as, simple • supported beam, fixed beam, cantilever beam, overhanging beam, continuous • beam & different types of supports.	-	-	-	-
PC10. • Use Tekla to design steel structures Ex. tower, truss & find out the • eligible members. Use the surface panel models to design shear walls(RC • wall)using lift room Including practice & foundation to design, pile, mat, • isolated, combined footings.	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0913
NOS Name	Demonstrate Tekla for steel, /concrete structure & bridge design with load application.
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	1
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

Qualification Pack

MSME/CON/N0912: Carry out Architectural modeling, exterior and interior, render, and animation with Revit detailing.

Description

Architectural modeling using Revit, set up units & element properties, annotating, detailing, presentation tools, printing, export/import.

Scope

The scope covers the following :

- Architectural modeling using Revit, set up units & element properties, annotating, detailing, presentation
- tools, printing, export/import.

Elements and Performance Criteria

MSME/PDSPM/06 Carry out Architectural modeling, exterior and interior, render, animation with Revit detailing

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

PC1. • Create a new project, Sketch element, Modify an element, Move an element,
• Rotate an element, Mirror an element,
• Delete an element, Work with project view.

PC2. • Create levels, Work with level, elevation & Floor plan.Work with wall, Add
• doors to a wall, Add window to a wall& component.

PC3. • Use align tools, Split tools Trim tools, Offset tools, Match type tools, Set color
• for wall. Understand section libraries, Create a floor, Modify floor, Create roof,
• Modify roof, Create ceiling, Modify ceiling, Cut open in.

PC4. • Identify Temporary dimension, Permanent dimension, modify dimension,
• Room & area
• Analyze Area, Color fill skim, Camera views Work through. Revit Structure & MEP.

PC5. • Do the rendering work flow, Use light, Add plants & entourage, Render &
• image. Understand the sectioning, floor plan, elevation, Work with sheets. Use title
• block, Print the drawing

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/06 Carry out Architectural modeling, exterior and interior, render, animation with Revit detailing	-	100	-	-
PC1. • Create a new project, Sketch element, Modify an element, Move an element, • Rotate an element, Mirror an element, • Delete an element, Work with project view.	-	-	-	-
PC2. • Create levels, Work with level, elevation & Floor plan.Work with wall, Add • doors to a wall, Add window to a wall& component.	-	-	-	-
PC3. • Use align tools, Split tools Trim tools, Offset tools, Match type tools, Set color • for wall. Understand section libraries, Create a floor, Modify floor, Create roof, • Modify roof, Create ceiling, Modify ceiling, Cut open in.	-	-	-	-
PC4. • Identify Temporary dimension, Permanent dimension, modify dimension, • Room & area • Analyze Area, Color fill skim, Camera views Work through. Revit Structure & MEP.	-	-	-	-
PC5. • Do the rendering work flow, Use light, Add plants & entourage, Render & • image. Understand the sectioning, floor plan, elevation, Work with sheets. Use title • block, Print the drawing	-	-	-	-
NOS Total	-	100	-	-

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0912
NOS Name	Carry out Architectural modeling, exterior and interior, render, and animation with Revit detailing.
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	2
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0911: Carry out Architectural modeling, exterior and interior, render, and animation with Revit detailing.

Description

Architectural modeling using Revit, set up units & element properties, annotating, detailing, presentation tools, printing, export/import.

Scope

The scope covers the following :

- Architectural modeling using Revit, set up units & element properties, annotating, detailing, presentation
- tools, printing, export/import.

Elements and Performance Criteria

MSME/PDSPM/06 Carry out Architectural modeling, exterior and interior, render, animation with Revit detailing

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

PC1. • Create a new project, Sketch element, Modify an element, Move an element,
• Rotate an element, Mirror an element,
• Delete an element, Work with project view.

PC2. • Create levels, Work with level, elevation & Floor plan.Work with wall, Add
• doors to a wall, Add window to a wall& component.

PC3. • Use align tools, Split tools Trim tools, Offset tools, Match type tools, Set color
• for wall. Understand section libraries, Create a floor, Modify floor, Create roof,
• Modify roof, Create ceiling, Modify ceiling, Cut open in.

PC4. • Identify Temporary dimension, Permanent dimension, modify dimension,
• Room & area
• Analyze Area, Color fill skim, Camera views Work through. Revit Structure & MEP.

PC5. • Do the rendering work flow, Use light, Add plants & entourage, Render &
• image. Understand the sectioning, floor plan, elevation, Work with sheets. Use title
• block, Print the drawing

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/06 Carry out Architectural modeling, exterior and interior, render, animation with Revit detailing	**100**	**-**	**-**	**-**
PC1. • Create a new project, Sketch element, Modify an element, Move an element, • Rotate an element, Mirror an element, • Delete an element, Work with project view.	-	-	-	-
PC2. • Create levels, Work with level, elevation & Floor plan.Work with wall, Add • doors to a wall, Add window to a wall& component.	-	-	-	-
PC3. • Use align tools, Split tools Trim tools, Offset tools, Match type tools, Set color • for wall. Understand section libraries, Create a floor, Modify floor, Create roof, • Modify roof, Create ceiling, Modify ceiling, Cut open in.	-	-	-	-
PC4. • Identify Temporary dimension, Permanent dimension, modify dimension, • Room & area • Analyze Area, Color fill skim, Camera views Work through. Revit Structure & MEP.	-	-	-	-
PC5. • Do the rendering work flow, Use light, Add plants & entourage, Render & • image. Understand the sectioning, floor plan, elevation, Work with sheets. Use title • block, Print the drawing	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0911
NOS Name	Carry out Architectural modeling, exterior and interior, render, and animation with Revit detailing.
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	1
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0907: Estimation of building with rate analysis of civil works.

Description

Estimation of the materials, labour for a given project with detailed cost analysis of that building project.

Scope

The scope covers the following :

- Estimation of the materials, labour for a given project with detailed cost analysis of that building project.

Elements and Performance Criteria

MSME/PDSPM/04 Estimation of building with rate analysis of civil works.

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

PC1. Estimate, requirements for building design.

PC2. • Calculate number of bricks required for area, weight of brick, different brick
• densities required cost percentage of labor & different cost percentage of material.

PC3. Calculate plinth rate & cube rate.

PC4. • Calculate Lime concrete, footings, plinth height, plinth wall and super structure
• wall.

PC5. Solve problem with long and short wall and centerline method.

PC6. • Solve problem with ratio of cement, fine aggregate & coarse aggregate. Fresh
• technical siltation rate of different material with volume calculation.

PC7. Prepares word documents, excel sheets, power point presentations.

PC8. Prepare project related work (writing letter, resume) etc. by the help of MSWord.

PC9. • Prepare project related work in excel sheet like inputting building estimation
• data & calculating data in MS excel data

PC10. Create presentation with the help of MS office power point.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/04 Estimation of building with rate analysis of civil works.	**100**	**-**	**-**	**-**
PC1. Estimate, requirements for building design.	-	-	-	-
PC2. • Calculate number of bricks required for area, weight of brick, different brick • densities required cost percentage of labor & different cost percentage of material.	-	-	-	-
PC3. Calculate plinth rate & cube rate.	-	-	-	-
PC4. • Calculate Lime concrete, footings, plinth height, plinth wall and super structure • wall.	-	-	-	-
PC5. Solve problem with long and short wall and centerline method.	-	-	-	-
PC6. • Solve problem with ratio of cement, fine aggregate & coarse aggregate. Fresh • technical siltation rate of different material with volume calculation.	-	-	-	-
PC7. Prepares word documents, excel sheets, power point presentations.	-	-	-	-
PC8. Prepare project related work (writing letter, resume) etc. by the help of MSWord.	-	-	-	-
PC9. • Prepare project related work in excel sheet like inputting building estimation • data & calculating data in MS excel data	-	-	-	-
PC10. Create presentation with the help of MS office power point.	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0907
NOS Name	Estimation of building with rate analysis of civil works.
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	2
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0906: Design exterior and interior, render, animation with 3DS Max & sketch up, create Color & shadow in Photoshop

Description

Explain about 3ds max. Transfer plan from auto cad to 3ds max, using some standard object, light, camera, material & doing rendering, and animation.

Scope

The scope covers the following :

- Explain about 3ds max. Transfer plan from auto cad to 3ds max, using some standard object, light, camera,
- material & doing rendering, and animation.

Elements and Performance Criteria

MSME/PDSPM/03 Design exterior and interior, render, animation with 3DS Max & sketch up, create Color & shadow in Photoshop.

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

PC1.	• Work with object & modifier, reactors with 3Ds max. Work with grids, Use • snap tool, Move an object, Rotate an object, Mirror an object, Clone an object.
PC2.	• Create floor plan, elevation, Work with editable poly objects, Modify editable • poly object. Make shapes by using spline & Modify spline object using sub object.
PC3.	• Draw the drawing adding materials to object and refer libraries, Understand • the multi/sub-object for the window & doors, UVW map & make the rendering.
PC4.	• Operate lighting& different type of camera. Make scaling renderer& mental • ray/ renderer Use texture in3d building by using 3ds max software.
PC5.	• Work with v-ray, Set v-ray, V-ray rendering& animation in building. Work with • free camera& biped in drawing.
PC6.	• Make the beyond building models by using google sketch up components, keep • your model organized & modeling with photographs.
PC7.	Do the Work with styles and shadows, presenting the model inside sketch up.
PC8.	• Do the work with Google earth and 3d warehouse, printing your model, • exporting images and animations.Create presentation documents with layout & • deeper into lay outs Trips the ten sketch up, ten plug-ins, extensions, resources • worth & discover the works in ten ways.
PC9.	• Provide texture on existing modern building by using Photoshop tools. Menus • and panel, Open new files. Open existing files.
PC10.	• Create and view a new document Customizing the interface Setting • preferences.
PC11.	• Sketch multiple images use by rulers' guides, & grids, Adjust colors with the • new adjustment panel.
PC12.	• Resize the images by pixels & resolution using commands. Cut the images. • Use tools for Color correction& Effects (blur, noise etc).

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/03 Design exterior and interior, render, animation with 3DS Max & sketch up, create Color & shadow in Photoshop.	-	**100**	-	-
PC1. • Work with object & modifier, reactors with 3Ds max. Work with grids, Use • snap tool, Move an object, Rotate an object, Mirror an object, Clone an object.	-	-	-	-
PC2. • Create floor plan, elevation, Work with editable poly objects, Modify editable • poly object. Make shapes by using spline & Modify spline object using sub object.	-	-	-	-
PC3. • Draw the drawing adding materials to object and refer libraries, Understand • the multi/sub-object for the window & doors, UVW map & make the rendering.	-	-	-	-
PC4. • Operate lighting& different type of camera. Make scaling renderer& mental • ray/ renderer Use texture in3d building by using 3ds max software.	-	-	-	-
PC5. • Work with v-ray, Set v-ray, V-ray rendering& animation in building. Work with • free camera& biped in drawing.	-	-	-	-
PC6. • Make the beyond building models by using google sketch up components, keep • your model organized & modeling with photographs.	-	-	-	-
PC7. Do the Work with styles and shadows, presenting the model inside sketch up.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. • Do the work with Google earth and 3d warehouse, printing your model, • exporting images and animations.Create presentation documents with layout & • deeper into lay outs Trips the ten sketch up, ten plug-ins, extensions, resources • worth & discover the works in ten ways.	-	-	-	-
PC9. • Provide texture on existing modern building by using Photoshop tools. Menus • and panel, Open new files. Open existing files.	-	-	-	-
PC10. • Create and view a new document Customizing the interface Setting • preferences.	-	-	-	-
PC11. • Sketch multiple images use by rulers' guides, & grids, Adjust colors with the • new adjustment panel.	-	-	-	-
PC12. • Resize the images by pixels & resolution using commands. Cut the images. • Use tools for Color correction& Effects (blur, noise etc).	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0906
NOS Name	Design exterior and interior, render, animation with 3DS Max & sketch up, create Color & shadow in Photoshop
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	2
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

Qualification Pack

MSME/CON/N0905: Design exterior and interior, render, animation with 3DS Max & sketch up, create Color & shadow in Photoshop

Description

Explain about 3ds max. Transfer plan from auto cad to 3ds max, using some standard object, light, camera, material & doing rendering, and animation.

Scope

The scope covers the following :

- Explain about 3ds max. Transfer plan from auto cad to 3ds max, using some standard object, light, camera,
- material & doing rendering, and animation.

Elements and Performance Criteria

MSME/PDSPM/03 Design exterior and interior, render, animation with 3DS Max & sketch up, create Color & shadow in Photoshop.

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

PC1.	• Work with object & modifier, reactors with 3Ds max. Work with grids, Use • snap tool, Move an object, Rotate an object, Mirror an object, Clone an object.
PC2.	• Create floor plan, elevation, Work with editable poly objects, Modify editable • poly object. Make shapes by using spline & Modify spline object using sub object.
PC3.	• Draw the drawing adding materials to object and refer libraries, Understand • the multi/sub-object for the window & doors, UVW map & make the rendering.
PC4.	• Operate lighting& different type of camera. Make scaling renderer& mental • ray/ renderer Use texture in3d building by using 3ds max software.
PC5.	• Work with v-ray, Set v-ray, V-ray rendering& animation in building. Work with • free camera& biped in drawing.
PC6.	• Make the beyond building models by using google sketch up components, keep • your model organized & modeling with photographs.
PC7.	Do the Work with styles and shadows, presenting the model inside sketch up.
PC8.	• Do the work with Google earth and 3d warehouse, printing your model, • exporting images and animations.Create presentation documents with layout & • deeper into lay outs Trips the ten sketch up, ten plug-ins, extensions, resources • worth & discover the works in ten ways.
PC9.	• Provide texture on existing modern building by using Photoshop tools. Menus • and panel, Open new files. Open existing files.
PC10.	• Create and view a new document Customizing the interface Setting • preferences.
PC11.	• Sketch multiple images use by rulers' guides, & grids, Adjust colors with the • new adjustment panel.
PC12.	• Resize the images by pixels & resolution using commands. Cut the images. • Use tools for Color correction& Effects (blur, noise etc).

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/03 Design exterior and interior, render, animation with 3DS Max & sketch up, create Color & shadow in Photoshop.	**100**	**-**	**-**	**-**
PC1. • Work with object & modifier, reactors with 3Ds max. Work with grids, Use • snap tool, Move an object, Rotate an object, Mirror an object, Clone an object.	-	-	-	-
PC2. • Create floor plan, elevation, Work with editable poly objects, Modify editable • poly object. Make shapes by using spline & Modify spline object using sub object.	-	-	-	-
PC3. • Draw the drawing adding materials to object and refer libraries, Understand • the multi/sub-object for the window & doors, UVW map & make the rendering.	-	-	-	-
PC4. • Operate lighting& different type of camera. Make scaling renderer& mental • ray/ renderer Use texture in3d building by using 3ds max software.	-	-	-	-
PC5. • Work with v-ray, Set v-ray, V-ray rendering& animation in building. Work with • free camera& biped in drawing.	-	-	-	-
PC6. • Make the beyond building models by using google sketch up components, keep • your model organized & modeling with photographs.	-	-	-	-
PC7. Do the Work with styles and shadows, presenting the model inside sketch up.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. • Do the work with Google earth and 3d warehouse, printing your model, • exporting images and animations.Create presentation documents with layout & • deeper into lay outs Trips the ten sketch up, ten plug-ins, extensions, resources • worth & discover the works in ten ways.	-	-	-	-
PC9. • Provide texture on existing modern building by using Photoshop tools. Menus • and panel, Open new files. Open existing files.	-	-	-	-
PC10. • Create and view a new document Customizing the interface Setting • preferences.	-	-	-	-
PC11. • Sketch multiple images use by rulers' guides, & grids, Adjust colors with the • new adjustment panel.	-	-	-	-
PC12. • Resize the images by pixels & resolution using commands. Cut the images. • Use tools for Color correction& Effects (blur, noise etc).	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0905
NOS Name	Design exterior and interior, render, animation with 3DS Max & sketch up, create Color & shadow in Photoshop
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	1
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

Qualification Pack

MSME/CON/N0904: Analysis of structure & foundation with IS Code

Description

Demonstrate STAAD- PRO, & its uses. Do frame structure, steel structure & applying properties, loads, shear force and bending moment. Do design of steel, /concrete structure & staad foundation.

Scope

The scope covers the following :

- Demonstrate STAAD- PRO, & its uses. Do frame structure, steel structure & applying properties, loads, shear
- force and bending moment. Do design of steel, /concrete structure & staad foundation.

Elements and Performance Criteria

MSME/PDSPM/02 Analysis of structure & foundation with IS Code.

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

PC1. Identify the materials as per their properties.

PC2. Analyze problem related to elastic constant.

PC3. • Solve problem related to cantilever beam subjected by point load, UDL & by
• both, solving problem related to simply supported beam subjected by point load,
• UDL & by both point load & UDL. Solving problem related to overhanging beam
• subjected by point load & UDL. Finding out S.F. D & B.M.D in continuous beam.

PC4. Review and analyze the civil core problems.

PC5. • Calculate the coordinate system manually in paper & using that coordinate
• points create frame structure & steel structure in STAAD pro software.

PC6. • Operate feeding of the co-ordinates in STAAD pro & using tools like copy,
• paste, insert nodes, views, check dimension, rotate, text, change colors, and choose
• units with practice. Use AutoCAD software to transfer the file from auto cad to
• STAAD pro (using ID point system).

PC7. • Prepare water tank by using translational repeat & circular repeat & filling
• the water tank with plates (concrete slab) Triangular, Quad and by using auto cad
• software (ID points system), manually calculate amount of water required, find out
• specification of water tank & use grid system to form the transmission tower & use
• different types of planes and circular repeat, Generate truss in STAAD pro by using
• translational repeat & circular repeat make surface to cover the roof.

PC8. • Use property option to define material over the structure, Define different
• shapes
• Ex: - Circle, Rectangle, Tee, Trapezoidal. Use group option, Assign material over the
• structure, and define Angie, s-shape, channel, pipe section for steel structure.
• Manually find out structure, Dead & Live loads Ex: - slab weight, wall weight,
• column weight, beam weight, live loads& using I.S codes to calculate basic wind
• speed & pressure, according to the different region by manually. Apply the
• calculated press

PC9. • Generate concrete parameters to design column, beam & slab by using IS 456
• code. Use STAAD pro to get elaborated details of beam, column & get working
• drawings from auto cad.Use STAAD pro to define various types of beams such as,
• simple supported beam, fixed beam, cantilever beam, overhanging beam,
• continuous beam & different types of supports.

PC10. • Use STAAD pro to design steel structures Ex. tower, truss & find out the
• eligible members. Use the surface panel models to design shear walls(RC
• wall)using lift room Including practice & STAAD foundation to design, pile, mat,
• isolated, combined footings.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/02 Analysis of structure & foundation with IS Code.	**-**	**100**	**-**	**-**
PC1. Identify the materials as per their properties.	-	-	-	-
PC2. Analyze problem related to elastic constant.	-	-	-	-
PC3. • Solve problem related to cantilever beam subjected by point load, UDL & by • both, solving problem related to simply supported beam subjected by point load, • UDL & by both point load & UDL. Solving problem related to overhanging beam • subjected by point load & UDL. Finding out S.F. D & B.M.D in continuous beam.	-	-	-	-
PC4. Review and analyze the civil core problems.	-	-	-	-
PC5. • Calculate the coordinate system manually in paper & using that coordinate • points create frame structure & steel structure in STAAD pro software.	-	-	-	-
PC6. • Operate feeding of the co-ordinates in STAAD pro & using tools like copy, • paste, insert nodes, views, check dimension, rotate, text, change colors, and choose • units with practice. Use AutoCAD software to transfer the file from auto cad to • STAAD pro (using ID point system).	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC7. • Prepare water tank by using translational repeat & circular repeat & filling • the water tank with plates (concrete slab) Triangular, Quad and by using auto cad • software (ID points system), manually calculate amount of water required, find out • specification of water tank & use grid system to form the transmission tower & use • different types of planes and circular repeat, Generate truss in STAAD pro by using • translational repeat & circular repeat make surface to cover the roof.	-	-	-	-
PC8. • Use property option to define material over the structure, Define different • shapes • Ex: - Circle, Rectangle, Tee, Trapezoidal. Use group option, Assign material over the • structure, and define Angie, s-shape, channel, pipe section for steel structure. • Manually find out structure, Dead & Live loads Ex: - slab weight, wall weight, • column weight, beam weight, live loads& using I.S codes to calculate basic wind • speed & pressure, according to the different region by manually. Apply the • calculated press	-	-	-	-
PC9. • Generate concrete parameters to design column, beam & slab by using IS 456 • code. Use STAAD pro to get elaborated details of beam, column & get working • drawings from auto cad.Use STAAD pro to define various types of beams such as, • simple supported beam, fixed beam, cantilever beam, overhanging beam, • continuous beam & different types of supports.	-	-	-	-
PC10. • Use STAAD pro to design steel structures Ex. tower, truss & find out the • eligible members. Use the surface panel models to design shear walls(RC • wall)using lift room Including practice & STAAD foundation to design, pile, mat, • isolated, combined footings.	-	-	-	-

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

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0904
NOS Name	Analysis of structure & foundation with IS Code
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	2
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0903: Analysis of structure & foundation with IS Code

Description

Demonstrate STAAD- PRO, & its uses. Do frame structure, steel structure & applying properties, loads, shear force and bending moment. Do design of steel, /concrete structure & staad foundation.

Scope

The scope covers the following :

- Demonstrate STAAD- PRO, & its uses. Do frame structure, steel structure & applying properties, loads, shear
- force and bending moment. Do design of steel, /concrete structure & staad foundation.

Elements and Performance Criteria

MSME/PDSPM/02 Analysis of structure & foundation with IS Code.

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

PC1. Identify the materials as per their properties.

PC2. Analyze problem related to elastic constant.

PC3. • Solve problem related to cantilever beam subjected by point load, UDL & by
• both, solving problem related to simply supported beam subjected by point load,
• UDL & by both point load & UDL. Solving problem related to overhanging beam
• subjected by point load & UDL. Finding out S.F. D & B.M.D in continuous beam.

PC4. Review and analyze the civil core problems.

PC5. • Calculate the coordinate system manually in paper & using that coordinate
• points create frame structure & steel structure in STAAD pro software.

PC6. • Operate feeding of the co-ordinates in STAAD pro & using tools like copy,
• paste, insert nodes, views, check dimension, rotate, text, change colors, and choose
• units with practice. Use AutoCAD software to transfer the file from auto cad to
• STAAD pro (using ID point system).

PC7. • Prepare water tank by using translational repeat & circular repeat & filling
• the water tank with plates (concrete slab) Triangular, Quad and by using auto cad
• software (ID points system), manually calculate amount of water required, find out
• specification of water tank & use grid system to form the transmission tower & use
• different types of planes and circular repeat, Generate truss in STAAD pro by using
• translational repeat & circular repeat make surface to cover the roof.

PC8. • Use property option to define material over the structure, Define different
• shapes
• Ex: - Circle, Rectangle, Tee, Trapezoidal. Use group option, Assign material over the
• structure, and define Angie, s-shape, channel, pipe section for steel structure.
• Manually find out structure, Dead & Live loads Ex: - slab weight, wall weight,
• column weight, beam weight, live loads& using I.S codes to calculate basic wind
• speed & pressure, according to the different region by manually. Apply the
• calculated press

PC9. • Generate concrete parameters to design column, beam & slab by using IS 456
• code. Use STAAD pro to get elaborated details of beam, column & get working
• drawings from auto cad.Use STAAD pro to define various types of beams such as,
• simple supported beam, fixed beam, cantilever beam, overhanging beam,
• continuous beam & different types of supports.

PC10. • Use STAAD pro to design steel structures Ex. tower, truss & find out the
• eligible members. Use the surface panel models to design shear walls(RC
• wall)using lift room Including practice & STAAD foundation to design, pile, mat,
• isolated, combined footings.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/02 Analysis of structure & foundation with IS Code.	**100**	**-**	**-**	**-**
PC1. Identify the materials as per their properties.	-	-	-	-
PC2. Analyze problem related to elastic constant.	-	-	-	-
PC3. • Solve problem related to cantilever beam subjected by point load, UDL & by • both, solving problem related to simply supported beam subjected by point load, • UDL & by both point load & UDL. Solving problem related to overhanging beam • subjected by point load & UDL. Finding out S.F. D & B.M.D in continuous beam.	-	-	-	-
PC4. Review and analyze the civil core problems.	-	-	-	-
PC5. • Calculate the coordinate system manually in paper & using that coordinate • points create frame structure & steel structure in STAAD pro software.	-	-	-	-
PC6. • Operate feeding of the co-ordinates in STAAD pro & using tools like copy, • paste, insert nodes, views, check dimension, rotate, text, change colors, and choose • units with practice. Use AutoCAD software to transfer the file from auto cad to • STAAD pro (using ID point system).	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC7. • Prepare water tank by using translational repeat & circular repeat & filling • the water tank with plates (concrete slab) Triangular, Quad and by using auto cad • software (ID points system), manually calculate amount of water required, find out • specification of water tank & use grid system to form the transmission tower & use • different types of planes and circular repeat, Generate truss in STAAD pro by using • translational repeat & circular repeat make surface to cover the roof.	-	-	-	-
PC8. • Use property option to define material over the structure, Define different • shapes • Ex: - Circle, Rectangle, Tee, Trapezoidal. Use group option, Assign material over the • structure, and define Angie, s-shape, channel, pipe section for steel structure. • Manually find out structure, Dead & Live loads Ex: - slab weight, wall weight, • column weight, beam weight, live loads& using I.S codes to calculate basic wind • speed & pressure, according to the different region by manually. Apply the • calculated press	-	-	-	-
PC9. • Generate concrete parameters to design column, beam & slab by using IS 456 • code. Use STAAD pro to get elaborated details of beam, column & get working • drawings from auto cad.Use STAAD pro to define various types of beams such as, • simple supported beam, fixed beam, cantilever beam, overhanging beam, • continuous beam & different types of supports.	-	-	-	-
PC10. • Use STAAD pro to design steel structures Ex. tower, truss & find out the • eligible members. Use the surface panel models to design shear walls(RC • wall)using lift room Including practice & STAAD foundation to design, pile, mat, • isolated, combined footings.	-	-	-	-

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

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0903
NOS Name	Analysis of structure & foundation with IS Code
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	1
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0902: Sketch Architectural drawings, section view, 3D View

Description

After completion of course Student should be able to Apply safe working practices.

Scope

The scope covers the following :

- After completion of course Student should be able to Apply safe working practices.

Elements and Performance Criteria

MSME/PDSPM/01 Sketch Architectural drawings, section view, 3D View

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

PC1. Do exercises to develop drawing manually on drawing sheet.

PC2. • Do unit conversation& make the plain scale, diagonal scale, Vernier scale,
• comparative scale, and scale of chord.

PC3. • Differentiate between 1st angle & 3rd angle projection. Draw orthographic
• views in 1st and 3rd angle projection method.

PC4. • Identify different types of Stairs, Parts of stairs,Different sizes of doors and
• windows by using technical terms of door and window.

PC5. Identify the culverts, syphons, and bridges. Design PEB structure.

PC6. Calculate the coordinate system in manually & using by AutoCAD software.

PC7. Draw all the drawing & diagram by using software.

PC8. • Make practice some command option, arc& TEXT option by using In all the
• drawing & diagram.

PC9. • Identify function &use of Hatching, gradient, Layer in drawing or building
• plan.

PC10. • Set the dimension, scale & modify, increase /decrease the object by using
• scale factor and create the interior design in the building drawing.

PC11. • Identify to make the steel structure manual in paper sheet & also system.
• Calculating the steel property(volume, weight, density)

PC12. • Set the 3D toolbar & 3D views. Create 3D Drawing &modeling in building
• plan by using modeling toolbar (extrude, subtract, union, press pull, sweep, loft,
• revolve, box or other option) & modifying the 3D building model by using solid editing toolbar (Extrude face, move face, shell, color face, chamfer edge, fillet edge
• or other option).

PC13. • Make spiral stair case & details, Put material texture on spiral stair case &
• building drawing. Insert block, W block, block & create template with proper
• dimension and using scale in the drawing

PC14. • Create 2D plan or 3D diagram for steel structure, Syphon, culvert & septic
• tank by using 3D option cad software. Set the lay out plan for plotting or printing &
• transfer .jpg format & work with raster image.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/01 Sketch Architectural drawings, section view, 3D View	-	100	-	-
PC1. Do exercises to develop drawing manually on drawing sheet.	-	-	-	-
PC2. • Do unit conversation& make the plain scale, diagonal scale, Vernier scale, • comparative scale, and scale of chord.	-	-	-	-
PC3. • Differentiate between 1st angle & 3rd angle projection. Draw orthographic • views in 1st and 3rd angle projection method.	-	-	-	-
PC4. • Identify different types of Stairs, Parts of stairs,Different sizes of doors and • windows by using technical terms of door and window.	-	-	-	-
PC5. Identify the culverts, syphons, and bridges. Design PEB structure.	-	-	-	-
PC6. Calculate the coordinate system in manually & using by AutoCAD software.	-	-	-	-
PC7. Draw all the drawing & diagram by using software.	-	-	-	-
PC8. • Make practice some command option, arc& TEXT option by using In all the • drawing & diagram.	-	-	-	-
PC9. • Identify function &use of Hatching, gradient, Layer in drawing or building • plan.	-	-	-	-
PC10. • Set the dimension, scale & modify, increase /decrease the object by using • scale factor and create the interior design in the building drawing.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. • Identify to make the steel structure manual in paper sheet & also system. • Calculating the steel property(volume, weight, density)	-	-	-	-
PC12. • Set the 3D toolbar & 3D views. Create 3D Drawing &modeling in building • plan by using modeling toolbar (extrude, subtract, union, press pull, sweep, loft, • revolve, box or other option) & modifying the 3D building model by using solid editing toolbar (Extrude face, move face, shell, color face, chamfer edge, fillet edge • or other option).	-	-	-	-
PC13. • Make spiral stair case & details, Put material texture on spiral stair case & • building drawing. Insert block, W block, block & create template with proper • dimension and using scale in the drawing	-	-	-	-
PC14. • Create 2D plan or 3D diagram for steel structure, Syphon, culvert & septic • tank by using 3D option cad software. Set the lay out plan for plotting or printing & • transfer .jpg format & work with raster image.	-	-	-	-
NOS Total	**-**	**100**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0902
NOS Name	Sketch Architectural drawings, section view, 3D View
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	2
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024

MSME/CON/N0901: Sketch Architectural drawings, section view, 3D View

Description

After completion of course Student should be able to Apply safe working practices.

Scope

The scope covers the following :

- After completion of course Student should be able to Apply safe working practices.

Elements and Performance Criteria

MSME/PDSPM/01 Sketch Architectural drawings, section view, 3D View

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

PC1. Do exercises to develop drawing manually on drawing sheet.

PC2. • Do unit conversation& make the plain scale, diagonal scale, Vernier scale,
• comparative scale, and scale of chord.

PC3. • Differentiate between 1st angle & 3rd angle projection. Draw orthographic
• views in 1st and 3rd angle projection method.

PC4. • Identify different types of Stairs, Parts of stairs,Different sizes of doors and
• windows by using technical terms of door and window.

PC5. Identify the culverts, syphons, and bridges. Design PEB structure.

PC6. Calculate the coordinate system in manually & using by AutoCAD software.

PC7. Draw all the drawing & diagram by using software.

PC8. • Make practice some command option, arc& TEXT option by using In all the
• drawing & diagram.

PC9. • Identify function &use of Hatching, gradient, Layer in drawing or building
• plan.

PC10. • Set the dimension, scale & modify, increase /decrease the object by using
• scale factor and create the interior design in the building drawing.

PC11. • Identify to make the steel structure manual in paper sheet & also system.
• Calculating the steel property(volume, weight, density)

PC12. • Set the 3D toolbar & 3D views. Create 3D Drawing &modeling in building
• plan by using modeling toolbar (extrude, subtract, union, press pull, sweep, loft,
• revolve, box or other option) & modifying the 3D building model by using solid editing toolbar (Extrude face, move face, shell, color face, chamfer edge, fillet edge
• or other option).

PC13. • Make spiral stair case & details, Put material texture on spiral stair case &
• building drawing. Insert block, W block, block & create template with proper
• dimension and using scale in the drawing

PC14. • Create 2D plan or 3D diagram for steel structure, Syphon, culvert & septic
• tank by using 3D option cad software. Set the lay out plan for plotting or printing &
• transfer .jpg format & work with raster image.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
MSME/PDSPM/01 Sketch Architectural drawings, section view, 3D View	**100**	**-**	**-**	**-**
PC1. Do exercises to develop drawing manually on drawing sheet.	-	-	-	-
PC2. • Do unit conversation& make the plain scale, diagonal scale, Vernier scale, • comparative scale, and scale of chord.	-	-	-	-
PC3. • Differentiate between 1st angle & 3rd angle projection. Draw orthographic • views in 1st and 3rd angle projection method.	-	-	-	-
PC4. • Identify different types of Stairs, Parts of stairs,Different sizes of doors and • windows by using technical terms of door and window.	-	-	-	-
PC5. Identify the culverts, syphons, and bridges. Design PEB structure.	-	-	-	-
PC6. Calculate the coordinate system in manually & using by AutoCAD software.	-	-	-	-
PC7. Draw all the drawing & diagram by using software.	-	-	-	-
PC8. • Make practice some command option, arc& TEXT option by using In all the • drawing & diagram.	-	-	-	-
PC9. • Identify function &use of Hatching, gradient, Layer in drawing or building • plan.	-	-	-	-
PC10. • Set the dimension, scale & modify, increase /decrease the object by using • scale factor and create the interior design in the building drawing.	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. • Identify to make the steel structure manual in paper sheet & also system. • Calculating the steel property(volume, weight, density)	-	-	-	-
PC12. • Set the 3D toolbar & 3D views. Create 3D Drawing &modeling in building • plan by using modeling toolbar (extrude, subtract, union, press pull, sweep, loft, • revolve, box or other option) & modifying the 3D building model by using solid editing toolbar (Extrude face, move face, shell, color face, chamfer edge, fillet edge • or other option).	-	-	-	-
PC13. • Make spiral stair case & details, Put material texture on spiral stair case & • building drawing. Insert block, W block, block & create template with proper • dimension and using scale in the drawing	-	-	-	-
PC14. • Create 2D plan or 3D diagram for steel structure, Syphon, culvert & septic • tank by using 3D option cad software. Set the lay out plan for plotting or printing & • transfer .jpg format & work with raster image.	-	-	-	-
NOS Total	**100**	**-**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	MSME/CON/N0901
NOS Name	Sketch Architectural drawings, section view, 3D View
Sector	Construction
Sub-Sector	
Occupation	Project Management 01 (Structural Design and Analysis)
NSQF Level	5.5
Credits	1
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 perv 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

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MSME/CON/N0909.Intro to surveying, leveling, types, GPS/DGPS function & uses	-	100	-	-	100	5
MSME/CON/N0908.Intro to surveying, leveling, types, GPS/DGPS function & uses.	100	-	-	-	100	5
MSME/CON/N0921.Explain Material Testing equipment for soil, aggreg	100	-	-	-	100	5
MSME/CON/N0910.EmployabilitySkills 01	100	-	-	-	100	5
MSME/CON/N0922.OJT 02	-	-	-	100	100	5
MSME/CON/N0920.2D/3D drafting including road C-section/I-section design, estimation.	-	100	-	-	100	5
MSME/CON/N0919.2D/3D drafting including road C-section/I-section design, estimation.	100	-	-	-	100	5
MSME/CON/N0918.Demonstrate the project, planning, & scheduling by using primavera	-	100	-	-	100	5
MSME/CON/N0917.Demonstrate the project, planning, & scheduling by using primavera	100	-	-	-	100	5
MSME/CON/N0916.Create types of topographical map through Arc-GIS software.	-	100	-	-	100	5
MSME/CON/N0915.Create types of topographical map through Arc-GIS software.	100	-	-	-	100	5
MSME/CON/N0914.Demonstrate Tekla for steel, /concrete structure & bridge design with load application.	-	100	-	-	100	5
MSME/CON/N0913.Demonstrate Tekla for steel, /concrete structure & bridge design with load application.	100	-	-	-	100	5

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
MSME/CON/N0912.Carry out Architectural modeling, exterior and interior, render, and animation with Revit detailing.	-	100	-	-	100	5
MSME/CON/N0911.Carry out Architectural modeling, exterior and interior, render, and animation with Revit detailing.	100	-	-	-	100	5
MSME/CON/N0907.Estimation of building with rate analysis of civil works.	100	-	-	-	100	5
MSME/CON/N0906.Design exterior and interior, render, animation with 3DS Max & sketch up, create Color & shadow in Photoshop	-	100	-	-	100	5
MSME/CON/N0905.Design exterior and interior, render, animation with 3DS Max & sketch up, create Color & shadow in Photoshop	100	-	-	-	100	5
MSME/CON/N0904.Analysis of structure & foundation with IS Code	-	100	-	-	100	4
MSME/CON/N0903.Analysis of structure & foundation with IS Code	100	-	-	-	100	2
MSME/CON/N0902.Sketch Architectural drawings, section view, 3D View	-	100	-	-	100	2
MSME/CON/N0901.Sketch Architectural drawings, section view, 3D View	100	-	-	-	100	2
Total	**1200**	**900**	**-**	**100**	**2200**	**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.
BM	Bench Mark