

QUALIFICATION FILE

Construction Fabricator

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☐ Apprenticeship

☒ Upskilling ☐ Dual/Flexi Qualification ☒ For ToT ☒ For ToA

☒ General ☒ Multi-skill (MS) ☐ Cross-Sectoral (CS) ☐ Future Skills ☐ OEM

NCrF/NSQF Level: 4

Submitted By:

The Institution of Civil Engineers Society

Address: 301-303, Suncity Trade Tower, Sector-21, Gurugram, Haryana-122016

Submitting Body Contact Details:

Name: Maya Thakur

Position in the Organization: Chief Executive Officer (CEO)

Address: Same as above

Tel number(s): +91 9717900050

E-mail address: ceo@iceskills.in

Table of Contents

Section 1: Basic Details	4
Section 2: Module Summary	7
NOS/s of Qualifications	7
Mandatory NOS/s:	7
Elective 1: Masonry	8
Elective 2: Woodworking	9
Elective 3: Metal working	10
Elective 4: Concreting	11
Optional 1: Sheet Metal Fitting	12
Optional 2: Mivan Shuttering: Aluminium Formwork	13
Assessment - Minimum Qualifying Percentage	13
Section 3: Training Related	14
Section 4: Assessment Related	15
Section 5: Evidence of the need for the Qualification	16
Section 6: Annexure & Supporting Documents Check List	16
Annexure: Evidence of Level	17
Annexure: Tools and Equipment (Lab Set-Up)	20
Annexure: Industry Validations Summary	24
Annexure: Training & Employment Details	27
Annexure: Blended Learning	28
Annexure: Detailed Assessment Criteria	29
Annexure: Assessment Strategy	61
Annexure: Acronym and Glossary	64

Acronym.....64

Glossary67

Annexure: Career Progression69

NSQC Approved

Section 1: Basic Details

1.	Qualification Name	Construction Fabricator																										
2.	Sector/s	Construction																										
3.	Type of Qualification: ☒ New ☐ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: NA <i>(change to previous, once approved)</i>	Qualification Name of existing/previous version: NA																									
4.	a. OEM Name b. Qualification Name <i>(Wherever applicable)</i>	NA																										
5.	National Qualification Register (NQR) Code & Version <i>(Will be issued after NSQC approval)</i>	QG-04-CO-046442025-V1-ICES & Version 1.0	6. NCrF/NSQF Level: 4																									
7.	Award (Certificate/Diploma/Advance Diploma/Any Other) <i>(Wherever applicable specify multiple entry/exits also & provide details in annexure)</i>	Certificate																										
8.	Brief Description of the Qualification	A Construction Fabricator assembles, shapes and installs materials like metal, wood, masonry and concrete to create structural elements for buildings and infrastructure. The individual interprets construction drawings, identifies materials and follows the applicable safety and quality standards. The specializations available in the job include masonry, woodworking, metalworking and concreting.																										
9.	Eligibility Criteria for Entry for Student / Trainee / Learner / Employee	<table border="1"> <tr> <th colspan="3">a. Entry Qualification & Relevant Experience:</th> </tr> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> <tr> <td>1.</td> <td>12th Grade pass</td> <td></td> </tr> <tr> <td>2.</td> <td>10th Grade Pass</td> <td>3 years of Relevant Industry Experience</td> </tr> <tr> <td>3.</td> <td>8th Grade Pass</td> <td>6 years of Relevant Industry Experience</td> </tr> <tr> <td>4.</td> <td>Previous relevant Qualification of NSQF Level 3</td> <td>3 years of Relevant Industry Experience</td> </tr> <tr> <td>5.</td> <td>Previous relevant Qualification of NSQF Level 3.5</td> <td>1.5 years of Relevant Industry Experience</td> </tr> <tr> <td colspan="3">b. Age: As Per Government Norms</td> </tr> </table>			a. Entry Qualification & Relevant Experience:			S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1.	12th Grade pass		2.	10th Grade Pass	3 years of Relevant Industry Experience	3.	8th Grade Pass	6 years of Relevant Industry Experience	4.	Previous relevant Qualification of NSQF Level 3	3 years of Relevant Industry Experience	5.	Previous relevant Qualification of NSQF Level 3.5	1.5 years of Relevant Industry Experience	b. Age: As Per Government Norms		
a. Entry Qualification & Relevant Experience:																												
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)																										
1.	12th Grade pass																											
2.	10th Grade Pass	3 years of Relevant Industry Experience																										
3.	8th Grade Pass	6 years of Relevant Industry Experience																										
4.	Previous relevant Qualification of NSQF Level 3	3 years of Relevant Industry Experience																										
5.	Previous relevant Qualification of NSQF Level 3.5	1.5 years of Relevant Industry Experience																										
b. Age: As Per Government Norms																												

10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	13	11. Common Cost Norm Category (I/II/III) (wherever applicable): I				
12.	Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)	Not Applicable					
13.	Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)	Minimum Duration:					
		☐ Offline ☐ Online ☒ Blended					
		Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)
		Classroom (offline)	90	180	60		330
		Online	60				60
		Maximum Duration:					
		☐ Offline ☐ Online ☒ Blended					
		Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)
		Classroom (offline)	330	630	210		1170
		Online	60				60
(Refer Blended Learning Annexure for details)							
14.	Aligned to NCO/ISCO Code/s (if no code is available mention the same)	NCO-2015/7122.0601, NCO-2015/7112.0200, NCO-2015/7115.0201, NCO-2015/7213.0200, NCO-2015/7114.9900					
15.	Progression path after attaining the qualification (Please show Professional and Academic progression)	Supervisor Fabricator (NSQF Level: 5)					
16.	Other Indian languages in which the Qualification & Model Curriculum are being submitted	Hindi					

17.	Is similar Qualification(s) available on NQR-if yes, justification for this qualification	☐ Yes ☒ No URLs of similar Qualifications:	
18.	Is the Job Role Amenable to Persons with Disability	☐ Yes ☒ No If “Yes”, specify applicable type of Disability:	
19.	How Participation of Women will be Encouraged	Career Awareness Programs: Conduct workshops and seminars in schools, colleges and vocational training centers to introduce young women to career opportunities in construction fabrication. Targeted Training Programs: Develop specialized training programs to equip women with the necessary skills and knowledge required for construction fabrication. These programs can be offered through vocational institutes and construction training academies. Mentorship Programs: Establish mentorship networks connecting aspiring female professionals with experienced Construction Fabricators who can provide guidance, technical support and career growth opportunities. Industry Partnerships: Collaborate with construction firms, industry associations and training providers to create initiatives aimed at increasing female participation in construction fabrication jobs. Facilities: Ensure that job sites and training centers provide necessary facilities such as designated rest areas, safety gear suited for women and flexible work arrangements to support female professionals in the field.	
20.	Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)	☒ Yes ☐ No (Covered in ICE/CON/N0502)	
21.	Is Qualification Suitable to be Offered in Schools/Colleges	Schools ☐ Yes ☒ No Colleges ☒ Yes ☐ No	
22.	Name and Contact Details of Submitting / Awarding Body SPOC (In case of CS or MS, provide details of both Lead AB & Supporting ABs)	Name: Maya Thakur Email: ceo@iceskills.in Contact No.: +91 9717900050 Website: www.iceskills.in	
23.	Final Approval Date by NSQC: 07-10-2025	24. Validity Duration: 3 Years	25. Next Review Date: 07-10-2028

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer to the curriculum document.

Th.-Theory **Pr.**-Practical **OJT**-On the Job Training **Man.**-Mandatory **Rec.**-Recommended **Proj.**-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/ NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Identify construction building materials and components	ICE/CON/ N0501, v1.0	Core	4	4	20	70	30		120	30	60		10	100	15
2.	Follow Environment, Health and Safety (EHS) Guidelines at Construction Sites	ICE/CON/ N0502, v1.0	Core	4	1	10	20			30	30	60		10	100	10
3.	Employability Skills (60 Hours)	DGT/VSQ/N 0102, v1.0	Non-Core	4	2	60				60	20	30			50	5
Duration (in Hours) / Total Marks					7	90	90	30		210	80	150		20	250	30

Elective 1: Masonry

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer to the curriculum document.

Th.-Theory Pr.-Practical OJT-On the Job Training Man.-Mandatory Rec.-Recommended Proj.-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/ NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Plan and Execute Masonry Layouts and Foundations	ICE/CON/ N0503, v1.0	Core	4	1	10	15	5		30	30	60		10	100	10
2.	Construct Masonry Walls and Blocks	ICE/CON/ N0530, v1.0	Core	4	1	10	15	5		30	30	60		10	100	10
3.	Construct and Assemble Masonry Staircases	ICE/CON/ N0504, v1.0	Core	4	1	10	15	5		30	30	60		10	100	10
4.	Apply Plastering and Finishing Techniques	ICE/CON/ N0505, v1.0	Core	4	1	10	15	5		30	30	60		10	100	10
5.	Install and Maintain Masonry Paving Systems	ICE/CON/ N0506, v1.0	Core	4	1	10	15	5		30	30	60		10	100	15
6.	Implement Advanced Construction Technologies in Masonry	ICE/CON/ N0507, v1.0	Core	4	1	10	15	5		30	30	60		10	100	15
Duration (in Hours) / Total Marks					6	60	90	30		180	180	360		60	600	70

Elective 2: Woodworking

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer to the curriculum document.

Th.-Theory Pr.-Practical OJT-On the Job Training Man.-Mandatory Rec.-Recommended Proj.-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/ NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Prepare and Construct Timber Frameworks	ICE/CON/ N0508, v1.0	Core	4	1	10	15	5		30	30	60		10	100	10
2.	Construct Wooden Frames for Structural Elements	ICE/CON/ N0509, v1.0	Core	4	1	10	15	5		30	30	60		10	100	15
3.	Install Interior Wooden Partitions and Panels	ICE/CON/ N0510, v1.0	Core	4	2	20	30	10		60	30	60		10	100	15
4.	Assemble and Dismantle Shuttering for Concreting	ICE/CON/ N0511, v1.0	Core	4	1	10	15	5		30	30	60		10	100	15
5.	Construct and Install Wooden Structural Features	ICE/CON/ N0512, v1.0	Core	4	1	10	15	5		30	30	60		10	100	15
Duration (in Hours) / Total Marks					6	60	90	30		180	150	300		50	500	70

Elective 3: Metal working

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer to the curriculum document.

Th.-Theory Pr.-Practical OJT-On the Job Training Man.-Mandatory Rec.-Recommended Proj.-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/ NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Plan and Execute Metal Fabrication	ICE/CON/ N0513, v1.0	Core	4	1	10	15	5		30	30	60		10	100	10
2.	Cut, Bend and Assemble Reinforcement Bars	ICE/CON/ N0514, v1.0	Core	4	1	10	15	5		30	30	60		10	100	15
3.	Install and Weld Metal Structural Components	ICE/CON/ N0515, v1.0	Core	4	2	20	30	10		60	30	60		10	100	15
4.	Apply Surface Coatings and Treatments	ICE/CON/ N0516, v1.0	Core	4	1	10	15	5		30	30	60		10	100	15
5.	Install Energy-Efficient Metal Cladding Systems	ICE/CON/ N0517, v1.0	Core	4	1	10	15	5		30	30	60		10	100	15
Duration (in Hours) / Total Marks					6	60	90	30		180	150	300		50	500	70

Elective 4: Concreting

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer to the curriculum document.

Th.-Theory Pr.-Practical OJT-On the Job Training Man.-Mandatory Rec.-Recommended Proj.-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/ NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Th.	Pr.	Weightage (%) (if applicable)
1.	Prepare, Pour and Cure Concrete Structures	ICE/CON/ N0518, v1.0	Core	4	1	10	15	5		30	30	60		10	100	10
2.	Perform Concreting for Structural Elements	ICE/CON/ N0519, v1.0	Core	4	1	10	15	5		30	30	60		10	100	15
3.	Carry Out Reinforced Concrete Works	ICE/CON/ N0520, v1.0	Core	4	2	20	30	10		60	30	60		10	100	15
4.	Repair and Restore Concrete Surfaces	ICE/CON/ N0521, v1.0	Core	4	1	10	15	5		30	30	60		10	100	15
5.	Construct and Install Precast Concrete Structures	ICE/CON/ N0522, v1.0	Core	4	1	10	15	5		30	30	60		10	100	15
Duration (in Hours) / Total Marks					6	60	90	30		180	150	300		50	500	70

Optional 1: Sheet Metal Fitting

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer to the curriculum document.

Th.-Theory Pr.-Practical OJT-On the Job Training Man.-Mandatory Rec.-Recommended Proj.-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core / Non-Core	NCrF/NSQ F Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Cut, Shape and Install Sheet Metal Structures	ICE/CON/ N0523, v1.0	Core	4	1	10	15	5		30	30	60		10	100	10
2.	Assemble and Fabricate Sheet Metal Structures Using Advanced Techniques	ICE/CON/ N0524, v1.0	Core	4	2	5	45	10		60	30	60		10	100	15
3.	Apply Surface Treatments and Coatings to Sheet Metal	ICE/CON/ N0525, v1.0	Core	4	1	5	15	10		30	30	60		10	100	15
4.	Ensure Quality Control and Precision in Sheet Metal Fabrication	ICE/CON/ N0526, v1.0	Core	4	1	10	15	5		30	30	60		10	100	10
Duration (in Hours) / Total Marks					5	30	90	30		150	120	240		40	400	50

Optional 2: Mivan Shuttering: Aluminium Formwork

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer to the curriculum document.

Th.-Theory Pr.-Practical OJT-On the Job Training Man.-Mandatory Rec.-Recommended Proj.-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Assemble Aluminium Formwork Systems	ICE/CON/ N0527, v1.0	Core	4	1	5	15	10		30	30	60		10	100	10
2.	Install and Secure Aluminium Formwork on Construction Sites	ICE/CON/ N0528, v1.0	Core	4	2	5	45	10		60	30	60		10	100	20
3.	Perform Concrete Pouring and Removal of Aluminium Formwork	ICE/CON/ N0529, v1.0	Core	4	1	20	30	10		60	30	60		10	100	20
Duration (in Hours) / Total Marks					5	30	90	30		150	120	240		40	400	50

Assessment - Minimum Qualifying Percentage

Please specify **any one** of the following:

Minimum Pass Percentage –Aggregate at qualification level: 70% (Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)

Minimum Pass Percentage –NOS/Module-wise: ____% (Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)

Section 3: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Minimum Educational Qualification	Specialization	Relevant Industry Experience		Preferable Training Experience	
				Years	Specialization	Years	Specialization
		Post Graduation	Civil Engineering	2	Site Execution (Civil Work)	1	Site Execution (Civil Work)
		OR					
		Graduation	Civil Engineering	4	Site Execution (Civil Work)	1	Site Execution (Civil Work)
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)		Specialization	Relevant Industry Experience		Preferable Training Experience	
				Years	Specialization	Years	Specialization
		Post Graduation	Civil Engineering	5	Site Execution (Civil Work)	2	Site Execution (Civil Work)
		OR					
		Graduation	Civil Engineering	7	Site Execution (Civil Work)	2	Site Execution (Civil Work)
		OR					
		Diploma	Civil Engineering	9	Site Execution (Civil Work)	2	Site Execution (Civil Work)
		OR					
		Existing ToT certified Trainer	Construction fabricator	5	Site Execution (Civil Work)	5	Site Execution (Civil Work)
3.	Tools and Equipment Required for Training	☒ Yes ☐ No (If "Yes", details provided in Annexure)					
4.	In Case of Revised Qualification, Details of Any Upskilling Required for Trainer	Not Applicable					

Section 4: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Minimum Educational Qualification	Specialization	Relevant Industry Experience		Preferable Training/Assessment Experience	
				Years	Specialization	Years	Specialization
		Post Graduation	Civil Engineering	2	Site Execution (Civil Work)	1	Site Execution (Civil Work)
		OR					
		Graduation	Civil Engineering	4	Site Execution (Civil Work)	1	Site Execution (Civil Work)
		OR					
		Diploma	Civil Engineering	6	Site Execution (Civil Work)	1	Site Execution (Civil Work)
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Minimum Educational Qualification	Specialization	Relevant Technical Experience			
				Years		Specialization	
		Graduation	In any stream	1		in basic computer skills, documentation, coordination etc.	
		OR					
		Diploma	In any stream	2		in basic computer skills, documentation, coordination etc.	
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Minimum Educational Qualification	Specialization	Relevant Industry Experience		Preferable Training/Assessment Experience	
				Years	Specialization	Years	Specialization
		Post Graduation	Civil Engineering	10	Site Execution (Civil Work)	2	Site Execution (Civil Work)
		OR					
		Graduation	Civil Engineering	10	Site Execution (Civil Work)	2	Site Execution (Civil Work)

4.	Tools and Equipment Required for Training	☒ Yes ☐ No (If “Yes”, details provided in Annexure)
5.	Assessment Mode (Specify the assessment mode)	Offline
6.	Tools and Equipment Required for Assessment	☒ Same as for training ☐ Yes ☐ No (details to be provided in Annexure-if it is different for Assessment)

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	Latest Skill Gap Study (not older than 2 years) (Yes/No):	Yes
2.	Latest Market Research Reports or any other source (not older than 2years) (Yes/No):	Yes
3.	Government /Industry initiatives/ requirement (Yes/No):	Yes
4.	Number of Industry validations provided:	29
5.	Estimated nos. of people to be trained and employed:	500 & 370
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: If “No”, why:	In Process

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name:

1.	Annexure: NCrF/NSQF level justification based on NCrF level/NSQF descriptors (Mandatory)	Yes
2.	Annexure: List of tools and equipment relevant for qualification (Mandatory, except in case of online course)	Yes
3.	Annexure: Detailed Assessment Criteria (Mandatory)	Yes
4.	Annexure: Assessment Strategy (Mandatory)	Yes
5.	Annexure: Blended Learning (Mandatory, in case selected Mode of delivery is “Blended Learning”)	No
6.	Annexure: Multiple Entry-Exit Details (Mandatory, in case qualification has multiple Entry-Exit)	No
7.	Annexure: Acronym and Glossary (Optional)	Yes
8.	Supporting Document: Model Curriculum (Mandatory – Public view)	Yes
9.	Supporting Document: Career Progression (Mandatory - Public view)	Yes
10.	Supporting Document: Occupational Map (Mandatory)	Yes
11.	Supporting Document: Assessment SOP (Mandatory)	Yes
12.	Any other document you wish to submit:	No

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	Possesses specialized knowledge of procedures employed in both routine and non routine contexts. Possesses specialized operational knowledge and understanding of the work. Has complete knowledge of concept of time required for delivery; and Quality for a range of issues. Has knowledge of collecting and interpreting the available information, drawing conclusions and communicating the same. Understands the financial and feasibility aspect of various work/solutions options Specialized knowledge OR/AND Proficient with diverse procedural knowledge, operational understanding, time and quality management, data interpretation and financial feasibility analysis	A Construction Fabricator must have a solid understanding of construction materials, components and their applications across various specializations such as masonry, metalworking, woodworking and concreting. The role requires familiarity with construction drawings, safety protocols and quality standards for executing fabrication tasks. A good knowledge of construction methodologies, from laying foundations to assembling structural elements, is necessary for precision and compliance. They must understand the technical specifications and work in coordination with other teams to ensure seamless project execution. Hence, it falls under Level 4	4
Professional and Technical Skills/ Expertise/ Professional Knowledge	Possesses specialized professional and technical skills; displays clarity of professional knowledge and technical skills in broad range of activities/ tasks. Can apply the required knowledge for successfully implementing or applying techniques/ processes in a specific field/ job role, The ability to gain and where relevant apply a range of knowledge, skills and understanding, Can clearly identify the relevant tools; and has advanced knowledge of materials in most routine/ non-routine contexts. Possesses the required operational skills for the work/ job. Skill to deliver job/ work with the required precision and in the estimated timelines. Capabilities of carrying out a choice of processes and procedures within the range of familiar / unfamiliar contexts. Specialized skills Professionally skilled with advanced knowledge, capable of successfully implementing techniques and delivering work with precision.	A Construction Fabricator should possess the technical skill to plan and execute fabrication tasks such as cutting, shaping, assembling and installing materials accurately. Proficiency in using fabrication tools and equipment, including hand tools, power tools and machinery, is essential. They must understand how to interpret construction drawings and execute tasks like creating masonry layouts, assembling metal structures and installing concrete elements with precision. Attention to detail, quality assurance and troubleshooting are key components for achieving high standards in construction fabrication. Hence, it falls under Level 4.	4
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	Have much broader Employability Skills including understanding of career planning, digital skills, financial and legal literacy. Good Communication skills, both oral	A Construction Fabricator needs to cultivate employability skills such as teamwork, communication and adaptability to effectively	4

	and written. Initiative and Leadership Abilities, Advanced literacy and Numeracy skills, Has good skills for self employment and entrepreneurship skills/ entrepreneurial Mind set which may potentially create job for more persons (say 3 to 5), Skills for accurate workshop/ mathematical calculation and estimations and understanding of arithmetic and algebraic principles. Can comfortably use most of the basic digital tools, has clear understanding of Financial and Digital literacy, Aadhaar and Mobile, uses digital payments etc. with proficiency, Good understanding of Constitutional values and Citizenship, inclusion and Diversity. Very Good understanding of social political and work environment Team readiness, self entrepreneurship readiness Highly skilled and versatile professional with proficiency in employability skills including communication, leadership, entrepreneurship and digital and financial literacy	collaborate with other construction professionals, including masons, carpenters and welders. Time management, resource optimization and meeting deadlines are essential for maintaining productivity. Additionally, they should understand job planning, cost estimation for materials and managing on-site resources efficiently. They must also be ready to work under pressure, maintain a high level of professionalism and be proactive in ensuring that tasks are completed according to safety and quality standards. Hence, it falls under Level 4.	
Broad Learning Outcomes/Core Skill	The candidate must be able to carry out a specialized job/ work/ tasks in a familiar/ unfamiliar, predictable/ unpredictable, routine/ nonroutine, situation of multiple options/ choices. Focus on range of application of standard and non standard procedures and somewhat complex operations in production/ services. Able to identify the problems and a wider possible range of solutions with pros and cons in production/ services, Complex tasks are performed by himself without much instructions and supervision. Apply related occupational safety and general hygiene norms and environmental aspects. For mini entrepreneurs end to end clear understanding of development, production, quality parameters and delivery and marketing processes. Applies range of well developed technical skills with clarity of activities involving clear choices within familiar contexts, Has knowledge and is able to continuously improve processes which the individual uses for concerned job roles, Has information of associated Risks with related job roles, Uses discretion and judgement over a range of known responses to familiar problems. Specialized/ complex jobs/tasks Versatile candidate adept at executing specialized tasks	At Level 4, a Construction Fabricator should be able to read and interpret construction drawings, plan tasks and measure and cut materials accurately. They must understand how to select appropriate materials for specific tasks across different fabrication specializations. Key skills include executing masonry work, woodwork, metal fabrication and concrete installation, while adhering to safety protocols and quality standards. Additionally, the ability to perform basic problem-solving, maintain tools and ensure proper documentation of work processes is essential. Continuous skill development, such as learning advanced construction technologies, will enhance their ability to work efficiently and contribute to improved project outcomes	4

	with minimal supervision, applying technical skills and problem solving with clarity.		
Responsibility	At Level 3.5/4 the candidate is a senior skilled technician, Takes complete responsibility for delivery and quality of own work and output as also the subordinates. Shares responsibility for the group tasks. At level 4 the candidate is a highly skilled master technician, Can perform all nonstandard procedures and non-routine tasks with confidence. Self and team responsibility Sr. Technician or Master Technician Individually accountable, collectively responsible; Capable and confident in nonstandard and nonroutine tasks	A Construction Fabricator assembles, shapes and installs materials like metal, wood, masonry and concrete to create structural elements for buildings and infrastructure. The individual interprets construction drawings, identifies materials and follows the applicable safety and quality standards. The specializations available in the job include masonry, woodworking, metalworking and concreting.	4

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30 Candidates

S. No.	Tool / Equipment Name	Specification	Units	Quantity for specified Batch size	Remarks
1.	Measuring Tape	Steel, 5m/10m	Nos	10	N/A
2.	Vernier Caliper	0-150mm	Nos	4	N/A
3.	Micrometer	0-25mm	Nos	4	N/A
4.	Pallet Jacks	2 ton	Nos	1	N/A
5.	Safety Helmet	IS marked	Nos	30	N/A
6.	Safety Gloves	Cut-resistant	Nos	30	N/A
7.	Safety Boots	Steel-toe	Nos	30	N/A
8.	First Aid Kit	ANSI/IS standard	Nos	2	N/A
9.	Fire Extinguisher	ABC Type, 5 kg	Nos	4	N/A
10.	Emergency Evacuation Map/Alarm	Visual & Audible	Nos	1	N/A
11.	Whiteboard & Markers	Magnetic whiteboard	Nos	1	N/A
12.	Printed Workbooks	As per curriculum	Sets	30	N/A
13.	Measuring Tape	Steel, 10m	Nos	8	N/A
14.	Spirit Level	600mm & 1200mm	Nos	8	N/A
15.	Plumb Bob	Brass 500g	Nos	8	N/A
16.	Brick Trowel	Pointed & flat	Nos	24	N/A
17.	Jointers	Gauged jointer 10-25mm	Nos	8	N/A
18.	Masonry Hammer	1.5 lb	Nos	8	N/A
19.	Rubber Mallet	500g	Nos	8	N/A
20.	Chisels (masonry)	Cold chisel set 6–25mm	Sets	4	N/A
21.	Mortar Mixer	Portable 1-bag mixer	Nos	2	N/A
22.	Wheelbarrow	Single wheel	Nos	6	N/A
23.	Shovels & Rakes	Spade, point shovel, rake	Nos	8	N/A
24.	Bricks / Concrete Blocks / AAC blocks	As per practice	Nos	1000	N/A
25.	Cement (OPC)	PPC/OPC 50kg bags	Bags	10	N/A
26.	Sand (M-sand)	Washed & graded	Cum	10	N/A
27.	Reinforcement Bars	Fe500, various dia	Kg	100	N/A
28.	Plastering Trowel	Steel, 300mm	Nos	15	N/A
29.	Plastering Hawk	300x300mm	Nos	6	N/A
30.	Float	Wooden & steel floats	Nos	12	N/A
31.	Screeds & Straight Edges	2m aluminum	Nos	8	N/A
32.	Mechanical Plaster Sprayer	Electric plaster spray machine	Nos	1	N/A

33.	Polishing Tools / Sanding Blocks	Various grits	Sets	8	N/A
34.	Paint Rollers & Brushes	Assorted sizes	Sets	8	N/A
35.	Spray Gun (for finishes)	Airless/Compressed air spray	Nos	1	N/A
36.	Nano-particle sealant	As per manufacturer, 5-25 L	Litres	3	N/A
37.	Plate Compactor	Reversible or forward plate	Nos	1	N/A
38.	Rubber Mallets	Heavy duty	Nos	8	N/A
39.	Jointing Tools	For polymeric sand	Nos	8	Optional
40.	Geotextile Membrane	Rolls	Nos	10	Optional
41.	Polymeric Sand	Bags	Bags	50	Optional
42.	Masonry 3D Printer	Large-format, geopolymer compatible	Nos	1	Optional
43.	Robotic Bricklaying Unit	Automated bricklayer	Nos	1	Optional
44.	Circular Saw	Portable 1400W, blade 184mm	Nos	4	Optional
45.	Table Saw	1.5-2 HP with guide	Nos	1	Optional
46.	Band Saw	1 HP	Nos	1	Optional
47.	Jigsaw	Variable speed	Nos	4	Optional
48.	Chisel Set	6-25mm	Sets	10	N/A
49.	Mortising Machine / Router	Portable router	Nos	2	N/A
50.	Drill Machine		Nos	6	N/A
51.	Clamps (Bar & C-clamps)	Various sizes	Sets	16	N/A
52.	Measuring & Layout	Framing square, marking gauges	Sets	8	N/A
53.	Sanding Machines	Belt & orbital	Nos	3	N/A
54.	CNC Wood Cutting Machine	CNC router	Nos	1	N/A
55.	Timber (Plywood, LVL, CLT)	Assorted sizes	Cuft/Sheets	500	N/A
56.	Nails, Screws, Bolts	Assorted sizes	Boxes	50	N/A
57.	Wood Adhesives & Sealants	Polyurethane/PVA	Litres	20	N/A
58.	Formwork Fasteners & Clamps	Wedges, props, clamps	Sets	40	N/A
59.	Release Agent	Liquid form release	Litres	5	N/A
60.	Bench Vise	150-200mm jaws	Nos	5	N/A
61.	Angle Grinder	100mm / 4-inch	Nos	8	N/A
62.	Bench Grinder	With wheels 150mm	Nos	2	N/A
63.	Welding Machine (MIG/TIG/Arc)	MIG 200A, TIG 200A, MMA 250A	Nos	3	N/A
64.	Welding Accessories	Electrodes, wire, gas cylinder	Sets	6	N/A
65.	Plasma Cutter	Portable plasma cutter	Nos	1	N/A
66.	Press Brake / Hydraulic Bender	Manual/hydraulic press brake	Nos	1	N/A
67.	Hydraulic Sheet Roller	For bending	Nos	1	N/A
68.	CNC Plasma/Laser Cutter	Workshop-grade CNC	Nos	1	N/A
69.	Calipers & Micrometers	Digital caliper 150mm	Nos	3	N/A
70.	Spot Welder & Rivet Guns	For sheet metal	Nos	2	N/A
71.	Rebar Cutter & Bender	Hydraulic/manual	Nos	2	N/A

72.	Binding Wires & Tying Tools	Wire coils, pliers	Kg/Sets	50	N/A
73.	Rebar Tiers / Tying Tools	Manual tying tools & pliers	Sets	8	N/A
74.	Rebar Bender (manual/hydraulic)	Suitable for up to 16mm dia	Nos	2	N/A
75.	Sand Blasting Cabinet (portable)	Small workshop size	Nos	1	Optional
76.	Paint Spray Booth or Area	Ventilated area	Nos	1	N/A
77.	Primer / Epoxy / Zinc-rich paints	As per manufacturer, drums	Litres	10	N/A
78.	Cladding Hand Tools	Sealant guns, rivet guns, screwguns	Sets	8	N/A
79.	Concrete Mixer	Portable 1-bag/mini drum mixer	Nos	1	N/A
80.	Concrete Pump	Small trailer pump	Nos	1	Optional
81.	Mechanical/Vibrators	Needle vibrator & surface vibrator	Nos	2	N/A
82.	Shuttering Panels (wood/ply/aluminium)	Formwork panels 2.4x1.2m	Nos	40	N/A
83.	Hydraulic Jacks & Lever Bars	For stripping formwork	Nos	2	Optional
84.	Curing Compound / Membrane	Chemical curing compounds	Litres	100	Optional
85.	Compression Testing Machine (lab)	1000kN or 2000kN	Nos	1	Optional
86.	Slump Cones & Moulds	For tests	Sets	5	N/A
87.	Concrete Mixers, Buckets & Trowels	Buckets 20L, brick trowels	Sets	15	N/A
88.	Polymer-modified mortars & grouts	Bags/Litres	Litres	3	N/A
89.	Cartridge Injectors & Grout Pumps	Manual/electric	Nos	2	N/A
90.	Lifting Anchors & Spreaders	Rated for loads	Sets	5	Optional
91.	Curing Racks / Moulds	Steel moulds	Nos	5	N/A
92.	Sheet Metal Snips & Shears	Hand snips, tinnern snips	Sets	8	N/A
93.	Press Brake (sheet bending)	Manual/hydraulic press brake	Nos	1	Optional
94.	Roller / Slip Roll	For curved panels	Nos	1	Optional
95.	Rivet Gun & Riveter Sets	Manual & pneumatic	Nos	2	Optional
96.	Deburring Tools	Files, deburring wheels	Sets	8	N/A
97.	Aluminium Formwork Panels	Mivan-style panels, assorted sizes	Nos	5	N/A
98.	Tie Rods, Wedges & Pins	As per system	Sets	10	N/A
99.	Laser Alignment Tool	Class II/III	Nos	1	N/A
100.	Panel Extractors & Hydraulic Jacks	As required	Sets	4	Optional
101.	Storage	Material Storage Racks	Nos	5	N/A

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Training Kit (Trainer Guide, Presentations)
2. Whiteboard/ Blackboard
3. Marker
4. Projector
5. Working Model

NSQC Approved

Annexure: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1.	AK Consulting	Mr. Nirman Jain	Technical Lead	6th Cross Road, 1st Stage, Kadugondanahalli, Bengaluru, Karnataka 560045	7042447336	nirmanjain777@gmail.com	
2.	Arth Design Build	Ms. Shobha	Associate Mgr. HR	301 ABK Oblee Plaza Opp. Care Hospital Road No. 1, Banjara Hills, Hyderabad	9908291188	akanksha.y@arthdesignbuild.com	
3.	Asirbadh Projects and Infrastructure Limited	Mr. Arbind Basu	GM Projects	AG Office Road, Doranda, Ranchi-834002, Jharkhand	7858801901	ahplmd@yahoo.com	
4.	Ayoleeza Consultants Pvt Ltd	Praveen Dubey	Deputy HR	Noida	7208744092	Praveen.dubey@ayoleeza.com	
5.	Build it Better Pvt. Ltd.	Mr. Rahul Arora	Principal Architect	Goyal Mension, Agrasen Bhawan, Behal, Bhiwani, Haryana 127028	9568438787	arrahul.bib@gmail.com	
6.	Chetak Enterprises	Amit Kumar	Asst Quality Cum Material Engineer	Jaipur	8743053306		
7.	Donge Projects Management Consultants Pvt. Ltd.	Mr. Balkrishna Kulkarni	President	401, Imperial Heights, Akshar Chowk, OP Road, Vadodra	9819657656	balkrishna.kulkarni@dongrepmc.com	
8.	Engineer Consultant Civil	Mr. Rohit	Consultant Engineer, Road Construction, Design and Development	Ghaziabad	7009097811	-	
9.	Feedback Advisory	Mr. Mohit Sharma	Manager	Jasola, Delhi	8800091932	mohit@advisoryfeedback.com	

10.	Freelance Architect (Individual Consultant)	Mr. Garvit Sharma	Architect	Ghaziabad, UP	9971967901	grsharma97@gmail.com	
11.	Gangaram Pvt. ITI	Mr. Munendra Dhakad	President	Morena, MP	9302970717	grpiti@gmail.com	
12.	ITLAFERR	Mr. Adil Hasan Siddiqui	Sr. Engineer	SPA, 205, South Park, Saket, New Delhi - 110017	9919990759	irconahs@outlook.com	
13.	Jawaharlal Nehru Architecture & Fine Arts University	Mr. K Chandrakanth	Asst. Professor	Masab Tank, Hyderabad, Telangana 500028	9293163582	Kchandranth.f&p@jnafau.ac.in	
14.	JMC Projects (India) Ltd	Raju Y.	Deputy Manager - Quality	Noida	8467847383	Raju.y@kalpataruprojects.com	
15.	Know How Schools LLP	Dipesh Bafna	Partner	Know How Schools LLP, C 601, Royal Casa, Ravet, Pune 412 101	9405266123	learn@knowhowschools.com	
16.	KRS Build infra Private Limited	Mr. Rohit Verma	Area Sales Manager	D-67, KCR Town, Agra, Uttar Pradesh-282002	8650050133	vrohit2096@gmail.com	
17.	Manpower Group Services India, Delhi	Durgesh Bagariya	Head Branch Operations	Unit No. 4-A/1 & Unit No. 4-A/2, \$th Floor, Plot No. 6, Uppal Plaza, M-6, Jasola, New Delhi, Delhi, 11025	9824054165	durgesh.b@manpower.co.in	
18.	Mr. Balakrishna R Kulkarni (SBUT, Mumbai)	Mr. Balakrishna R Kulkarni	Retd. (Associate Vice President)	SBUT, Mumbai	9819657656	brkulkarni1@gmail.com	
19.	Mr. Shrikant Gajanan Mhatre - Consulting Engineer & Valuer	Shrikant Gajanan Mhatre	Consulting Engineer & Valuer.	SHIV NIWAS / Sagar Society, Private High School Road I Pen - Raigad -Maharashtra - India . 402 107	9689728209	sshri1000@gmail.com	
20.	MYC Infra Pvt. Ltd.	Deepak Yadav	Project Coordinator	Noida	9411997000	Erdeepakyadav25@gmail.com	
21.	Pipal Tree Ventures Pvt. Ltd.	Ankit Kumar	Regional Head				

22.	Prodegios Architect and Interiors	Rekha Srichandan	Founder	Srk gardens, Kudlu Main road, Bangalore -560068	9986484007	rekhanungo@gmail.com	
23.	Rajlaxami Devbuild India Private Limited	Mr. Sonu Yadav	Structure Engineer	Guna, MP	9009314840		
24.	Samerka Consultants Pvt Ltd	Mr. Laxmikant B Umarji	Director	Mumbai	9820087948	samerkacpl@gmail.com	
25.	Senryaku Management Pvt. Ltd.	Mr. Udit Kaushik	Co-Founder	UTC031, DLF The Ultima, Sector 81, Gurugram, Haryana 122004	9690909024	udit.kau@gmail.com	
26.	SRM Institute of Science and Technology	Dr. T. Ch. Madhavi	Professor	Chennai	9840954753	madhavi@srmist.edu.in, tcmadhvi@gmail.com	
27.	Sunbright Manpower Solutions Pvt. Ltd.	Arun Kumar	Supervisor	Shop No. 3144, Main Road Narasupara (V), Kolar Taluk, 563133	7338463588	bangalore@sunbrightgroup.com	
28.	Urban Dreams Pvt. Ltd.	Mr. Asif Khan	Owner	Barabanki, Uttar Pradesh	8756078660	urbandreams101@gmail.com	
29.	Virtual Building Studio Pvt. Ltd.	Mr. Sachin Thakre	VP & Head HR	Siddhi Vinayak Towers, 603-604, Sarkhej - Gandhinagar Hwy, nr. Kataria Arcade, Makarba, Ahmedabad, Gujarat 380051	9372631943	sachin.thakre@virtualbuildingstudio.com	

Annexure: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2025-26	100	70	20	15	As per Industry requirement	As per Industry requirement
2026-27	200	150	40	30	As per Industry requirement	As per Industry requirement
2027-28	200	150	50	35	As per Industry requirement	As per Industry requirement

Data to be provided year-wise for next 3 years

Training, Assessment, Certification and Placement Data for previous versions of Qualifications:

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

1. NA

Content availability for previous versions of qualifications:

☒ Participant Handbook ☒ Facilitator Guide ☒ Digital Content ☒ Qualification Handbook ☐ Any Other:

Languages in which Content is available: English and Hindi

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

Refer NCVET “Guidelines for Blended Learning for Vocational Education, Training & Skilling” available on:

<https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education.%20Training%20&%20Skilling.pdf>

S.No.	Select the Components of the NOS	List Recommended Tools – for all selected Components	Offline: Online Ratio
1.	☒ Theory/ Lectures - Imparting theoretical and conceptual knowledge	Laptop/PC	5:2
2.	☒ Imparting Soft Skills, Life Skills and Employability Skills / Mentorship to Learners	Laptop/PC	1:1
3.	☐ Showing Practical Demonstrations to the learners		
4.	☐ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shopfloor training		
5.	☐ Tutorials/ Assignments/ Drill/ Practice		
6.	☐ Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7.	☐ On the Job Training (OJT)/ Project Work Internship/ Candidate Training		

Annexure: Detailed Assessment Criteria

Compulsory NOSs:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Identify Construction Building Materials and Components	identify building materials	10	20		4
	PC 1 identify different types of metals such as steel, aluminium and alloys used in construction				
	PC 2 distinguish between non-metallic materials like concrete, glass, wood and plastics based on their properties and uses				
	PC 3 interpret technical specifications of materials from product catalogues, datasheets and drawings				
	PC 4 identify common building components such as beams, columns, trusses and panels based on drawings and specifications	10	20		4
	inspect and verify the quality materials				
	PC 5 check the dimensions, weight and appearance of materials against specifications				
	PC 6 assess the physical condition of materials for defects such as cracks, rust or warping				
	PC 7 confirm material certifications and test reports to ensure compliance with the applicable quality standards				
	PC 8 report any discrepancies or substandard materials to the supervisor	10	20		2
	organize and prepare materials				
	PC 9 sort and label materials as per their type, size and intended use				
	PC 10 store materials safely to prevent damage or contamination				
	PC 11 Illustrate and interpret annexures like site layouts, route maps, NOC requests and safety certifications required during infrastructure deployment.				
NOS Total		30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Follow Environment, Health and Safety (EHS) Guidelines at Construction Sites	Identify hazards and risks	6	12		2
	PC 1 identify common construction site hazards, including falling objects, slippery surfaces and electrical risks				
	PC 2 evaluate the potential risks				
	PC 3 report the identified hazards to the supervisor or safety officer	6	12		2
	Comply with safety standards				
	PC 4 use and maintain personal protective equipment (PPE) such as helmets, gloves, safety boots and harnesses				
	PC 5 follow signage and barricading instructions to avoid restricted or hazardous areas	6	12		2
	PC 6 adhere to safe lifting techniques and tools to minimize strain and injuries				
	Follow health and hygiene guidelines				
	PC 7 maintain personal hygiene by using clean drinking water and designated rest areas	6	12		2
	PC 8 report health symptoms (e.g., respiratory issues, heatstroke) promptly to the designated authority				
	PC 9 ensure proper handling and disposal of materials that may pose health risks, such as asbestos or chemicals				
	Follow environmental protection measures	6	12		2
	PC 10 follow appropriate measures to prevent the spillage of construction materials and chemicals that may harm the environment				
	PC 11 carry out waste segregation activities into biodegradable and non-biodegradable for recycling and disposal				
	PC 12 follow protocols for conserving water and energy at the construction site	6	12		2
	Handle emergencies				
	PC 13 identify emergency alarms and evacuation routes				
	PC 14 use firefighting equipment (fire extinguishers, sand buckets) properly, when necessary	6	12		2
	PC 15 assist in first-aid or CPR procedures, if required				
NOS Total		30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Employability Skills (60 Hours)	Introduction to Employability Skills	1	1		
	PC 1 understand the significance of employability skills in meeting the current job market requirement and future of work				
	PC 2 identify and explore learning and employability relevant portals				
	PC 3 research about the different industries, job market trends, latest skills required and the available opportunities	1	1		
	Constitutional values – Citizenship				
	PC 4 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.				
	PC 5 follow environmentally sustainable practices	1	3		
	Becoming a Professional in the 21st Century				
	PC 6 recognize the significance of 21st Century Skills for employment				
	PC 7 practice the 21st Century Skills such as Self Awareness, behavioral 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	3	4		
	PC 8 adopt a continuous learning mindset for personal and professional development				
	Basic English Skills				
	PC 9 use basic English for everyday conversation in different contexts, in person and over the telephone	1	2		
	PC 10 read and understand routine information, notes, instructions, mails, letters etc. written in English				
	PC 11 write short messages, notes, letters, e-mails etc. in English				
	Career Development & Goal Setting	2	2		
	PC 12 identify career goals based on the skills, interests, knowledge and personal attributes				
	PC 13 prepare a career development plan with short- and long-term goals				
	Communication Skills	1	1		
	PC 14 follow verbal and non-verbal communication etiquette while communicating in professional and public settings				
	PC 15 use active listening techniques for effective communication				
	PC 16 communicate in writing using appropriate style and format based on formal or informal requirements	1	1		
	PC 17 work collaboratively with others in a team				
	Diversity & Inclusion				
	PC 18 communicate and behave appropriately with all genders and PwD	1	1		
	PC 19 escalate any issues related to sexual harassment at workplace according to POSH Act				

Financial and Legal Literacy					
PC 20	identify and select reliable institutions for various financial products and services such as bank accounts, debit and credit cards, loans, insurance etc.	2	3		
PC 21	carry out offline and online financial transactions, safely and securely, using various methods and check the entries in the passbook				
PC 22	identify common components of salary and compute income, expenses, taxes, investments etc				
PC 23	identify relevant rights and laws and use legal aid to fight against legal exploitation				
Essential Digital Skills					
PC 24	operate digital devices and use their features and applications securely and safely	3	5		
PC 25	carry out basic internet operations by connecting to the internet safely and securely, using mobile data or other available networks through Bluetooth, Wi-Fi, etc				
PC 26	display responsible online behaviour while using various social media platforms				
PC 27	create a personal email account, send and process received messages as per requirement				
PC 28	carry out basic procedures in documents, spreadsheets and presentations using respective and appropriate applications				
PC 29	utilize virtual collaboration tools to work effectively				
Entrepreneurship					
PC 30	identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	2	3		
PC 31	develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion				
PC 32	identify sources of funding, anticipate and mitigate any financial/ legal hurdles for the potential business opportunity				
Customer Service					
PC 33	identify different types of customers and ways to communicate with them	1	2		
PC 34	identify and respond to customer requests and needs in a professional manner				
PC 35	use appropriate tools to collect customer feedback				
PC 36	follow appropriate hygiene and grooming standards				
Getting ready for apprenticeship & Jobs					
PC 37	create a professional Curriculum vitae (Resume)	2	3		
PC 38	search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively				
PC 39	apply to identified job openings using offline /online methods as per requirement				
PC 40	answer questions politely, with clarity and confidence, during recruitment and selection				
PC 41	identify apprenticeship opportunities and register for it as per guidelines and requirements				
NOS Total		20	30		

Elective 1: Masonry

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Plan and Execute Masonry Layouts and Foundations	Read and interpret construction drawings	10	20		2
	PC 1 identify symbols, dimensions and specifications in construction drawings related to masonry layouts and foundations				
	PC 2 interpret site plans and elevation drawings to determine material requirements and work sequence				
	PC 3 verify construction details with the supervisor or engineer before execution				
	PC 4 extract information related to load distribution, reinforcement and drainage from construction drawings				
	PC 5 check for any discrepancies in drawings and report them to the supervisor				
	Measure and mark layouts for construction	10	20		4
	PC 6 use tools like spirit levels, plumb bobs and laser measuring devices to mark accurate layouts				
	PC 7 prepare the site for layout marking as per organizational norms.				
	PC 8 mark foundation and wall locations based on specified dimensions				
	PC 9 verify squareness of layouts using 3-4-5 or builder's square methods, as appropriate				
	PC 10 establish reference points and levels using optical leveling tools				
	PC 11 identify and address site-specific constraints impacting layout accuracy				
	Construct using bricks, blocks and geopolymer concrete	10	20		4
	PC 12 mix geopolymer concrete and monitor its properties for structural use				
	PC 13 set up formwork for foundation masonry using geopolymer concrete with proper alignment and stability				
	PC 14 lay and align bricks, blocks or stones using thin joint technology, mortar or adhesives				
	PC 15 maintain consistent joint thickness for bricks and blocks to enhance stability				
	PC 16 construct corners, walls and openings ensuring alignment and plumb				
	PC 17 use AAC blocks with prefabricated insulation inserts to enhance thermal efficiency				
	PC 18 ensure water-cement ratio and proper curing techniques				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Construct Masonry Walls and Blocks	Lay Bricks and Blocks	10	28		4
	PC 1 select the appropriate type and size of bricks or blocks based on construction requirements				
	PC 2 inspect bricks and blocks for defects before use				
	PC 3 prepare the mortar mix in the correct ratio as per project specifications				
	PC 4 apply mortar evenly and consistently to ensure proper bonding between bricks/blocks				
	PC 5 lay bricks/blocks in a straight and level manner using a spirit level and plumb bob				
	PC 6 maintain proper joint thickness and alignment throughout the wall construction				
	PC 7 ensure staggered joint placement for added structural strength				
	PC 8 cut bricks or blocks to size using appropriate tools such as a masonry saw or chisel				
	PC 9 check vertical and horizontal alignments at regular intervals to avoid deviations				
	PC 10 construct corners and junctions using proper bonding techniques for added stability				
	PC 11 integrate reinforcement as per structural requirements, such as wire mesh or rebar				
	PC 12 cure the masonry wall for the recommended period to enhance durability				
	Use Thin Joint Technology	10	16		2
	PC 13 prepare high-performance adhesive or thin joint mortar as per manufacturer guidelines				
	PC 14 apply a uniform and thin layer of adhesive to minimize joint thickness				
	PC 15 use a notched trowel to ensure even distribution of the thin joint adhesive				
	PC 16 position blocks with precision to avoid gaps or misalignment				
	PC 17 adjust block placement using light tapping to ensure firm bonding				
	PC 18 check for uniform load distribution across the wall structure				
	PC 19 maintain consistent joint thickness across the entire masonry wall				
	PC 20 remove excess adhesive immediately to prevent weak bonding				
	Install AAC Blocks with Prefabricated Insulation Inserts	10	16		4
	PC 21 prepare the site and ensure a level surface for AAC block installation				
	PC 22 use specialized adhesive designed for AAC blocks to ensure optimal bonding				
	PC 23 install prefabricated insulation inserts accurately within AAC block joints				
	PC 24 align AAC blocks precisely to maintain a uniform structure				
	PC 25 trim and shape AAC blocks as required using appropriate cutting tools				
	PC 26 reinforce AAC block walls where necessary using steel bars or mesh				
	PC 27 ensure that insulation inserts are securely placed to enhance thermal efficiency				
	PC 28 verify wall stability and strength by conducting basic quality checks				
	PC 29 follow curing procedures for AAC block construction to ensure long-term durability				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Construct and Assemble Masonry Staircases	Prepare for Masonry Staircase Construction	6	12		2
	PC 1 read and interpret staircase construction drawings, blueprints and specifications				
	PC 2 identify the appropriate staircase type (e.g., straight, spiral, L-shaped) based on design requirements				
	PC 3 calculate rise, run and tread dimensions to ensure ergonomic and code-compliant construction				
	PC 4 inspect and prepare the site for staircase construction, ensuring a level and stable foundation				
	PC 5 select and arrange the required masonry materials such as bricks, blocks and precast sections				
	PC 6 determine the load-bearing capacity and reinforcement needs of the staircase structure	6	12		2
	Construct Masonry Staircases Using Bricks and Blocks				
	PC 7 lay bricks or blocks to construct staircase steps, risers and landings				
	PC 8 use formwork or shuttering to shape and support staircases during construction				
	PC 9 apply the correct mortar mix for strong bonding and long-lasting durability				
	PC 10 install reinforcement bars (rebar) or mesh within the staircase structure for added strength				
	PC 11 ensure proper curing of masonry staircases to prevent cracks and enhance durability	6	12		2
	PC 12 align brick/block steps precisely to maintain uniformity and consistency				
	Assemble Staircases Using Precast Modular Sections				
	PC 13 handle and position precast modular staircase sections using appropriate lifting techniques				
	PC 14 ensure proper alignment of precast components as per design specifications				
	PC 15 apply bonding agents or mortar to securely join precast sections				
	PC 16 use fasteners or reinforcements, such as steel rods or anchors, for additional stability	6	12		2
	PC 17 seal joints between precast sections to prevent structural gaps and ensure durability				
	PC 18 verify the uniformity of steps and landings to maintain safety and comfort				
	Ensure Structural Integrity of the Staircase				
	PC 19 conduct load-bearing tests to verify the strength of the constructed staircase				
	PC 20 inspect the staircase for cracks, misalignment or instability and take corrective measures				
	PC 21 apply waterproofing and anti-skid treatments to improve safety and longevity	6	12		2
	PC 22 check for proper drainage and ventilation around the staircase to prevent water damage				
	PC 23 conduct finishing work, such as plastering and polishing, for a smooth and professional appearance				

	Align Staircases to Architectural Designs	6	12		2
	PC 24 ensure that staircase dimensions and aesthetics match the overall architectural design				
	PC 25 verify compliance with building codes and safety regulations for staircase construction				
	PC 26 coordinate with engineers, architects and site supervisors to address design concerns				
	PC 27 install handrails, balustrades or decorative elements as per architectural requirements				
	PC 28 conduct final quality checks before handing over the staircase for use				
NOS Total		30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Apply Plastering and Finishing Techniques	Prepare for Plastering and Finishing Work	5	13		2
	PC 1 inspect the surface condition to determine the required preparation and treatment				
	PC 2 select appropriate plastering materials based on substrate type and environmental conditions				
	PC 3 clean the masonry surface to remove dust, debris and loose particles before application				
	PC 4 apply bonding agents or primers to improve adhesion of plaster materials				
	PC 5 set up tools, mixing equipment and scaffolding safely before starting the work				
	Carry Out Plastering and Rendering Works	10	17		3
	PC 6 mix plaster or render to the required consistency using manual or mechanical methods				
	PC 7 apply base and finishing coats of plaster evenly using trowels, floats and spraying techniques				
	PC 8 use different plastering techniques such as single-coat, two-coat and multi-layer applications				
	PC 9 ensure uniform thickness and smooth application by using screeds and levelers				
	PC 10 finish plastered surfaces using troweling, polishing or textured finishing techniques				
	PC 11 check for hollowness or cracks in the plaster and rectify imperfections before drying				
	Use Self-Curing Plaster Techniques	10	17		3
	PC 12 prepare and apply self-curing plaster using polymer-based compounds				
	PC 13 ensure even distribution of self-curing agents to reduce water evaporation losses				
	PC 14 monitor the curing process and maintain surface hydration without external curing methods				
	PC 15 assess the effectiveness of self-curing plaster in different climate conditions				
	Perform Masonry Repair Using Nano-particle Sealants	5	13		2
	PC 16 identify damaged or deteriorated masonry surfaces requiring repair				
	PC 17 clean cracks, voids and porous surfaces before applying nano-particle sealants				
	PC 18 select the appropriate nano-sealant formulation based on the material type and damage level				
	PC 19 apply nano-sealants using brush, roller or spray techniques to ensure deep penetration				

	PC 20	monitor curing time and effectiveness of the sealant in strengthening and waterproofing masonry				
	PC 21	check for any remaining weak spots or gaps and reapply sealant as needed				
	NOS Total		30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes		Theory Marks	Practical Marks	Project Marks	Viva Marks
Install and Maintain Masonry Paving Systems	Prepare site for paving		5	5		2
	PC 1	assess the site conditions, including soil type, drainage and load-bearing capacity				
	PC 2	clear debris, vegetation and obstructions from the paving area				
	PC 3	mark layout and levels based on construction drawings and specifications				
	PC 4	compact and level the base using appropriate techniques for a stable foundation				
	install masonry paving systems		5	10		2
	PC 5	select suitable paving materials based on site requirements and design specifications				
	PC 6	lay pavers in the prescribed pattern, ensuring uniform alignment and spacing				
	PC 7	use appropriate jointing materials, such as polymeric sand or mortar, to secure pavers				
	PC 8	compact and stabilize the pavers using a plate compactor or manual tamping				
	Apply permeable paving technology		10	25		3
	PC 9	install permeable paving materials to facilitate stormwater drainage and reduce runoff				
	PC 10	incorporate gravel layers and drainage channels to enhance water infiltration				
	PC 11	ensure proper spacing and grading to maintain permeability and prevent clogging				
	Repair and maintain paving systems		10	20		3
	PC 12	inspect paving surfaces for defects such as sinking, cracking or misalignment				
	PC 13	replace damaged pavers without disturbing the surrounding layout				
PC 14	re-level and compact loose or uneven sections to restore stability					
PC 15	remove weeds, debris and sediment buildup from paved surfaces and joints					
PC 16	supervise the team to ensure responsible use of resources					
NOS Total		30	60		10	

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Implement Advanced Construction Technologies in Masonry	Understand And Apply 3D Printing Technology In Masonry	10	15		2
	PC 1 identify the principles and working mechanisms of 3D printing in masonry construction				
	PC 2 interpret 3D digital models and convert them into printable masonry structures				
	PC 3 set up and calibrate masonry-specific 3D printers for on-site and off-site applications				
	PC 4 prepare raw materials such as geopolymers concrete and specialized mortar for 3D printing				
	PC 5 monitor the printing process to ensure structural accuracy and material consistency				
	PC 6 troubleshoot printing defects such as layer misalignment, cracking or material inconsistencies				
	Apply Automated and Digital Methods in Masonry Activities	10	25		4
	PC 7 operation of robotic bricklaying and automated block assembly systems				
	PC 8 program and control robotic masonry systems for efficient and precise construction				
	PC 9 implement prefabricated masonry components using digital design and CNC-cutting methods				
	PC 10 utilize BIM (Building Information Modeling) to optimize masonry layouts and workflow efficiency				
	PC 11 integrate sensor-based monitoring systems to track construction accuracy and material usage				
	Follow Sustainability and Efficiency in Modern Masonry Techniques	10	20		4
	PC 12 assess the environmental impact of traditional versus advanced masonry techniques				
	PC 13 optimize material usage by reducing waste through automated and digital fabrication methods				
	PC 14 implement energy-efficient masonry solutions such as self-healing concrete and smart insulation				
	PC 15 evaluate the cost-effectiveness and return on investment (ROI) of using advanced construction technologies				
	PC 16 follow green building standards and certifications when applying digital masonry techniques				
	NOS Total	30	60		10

Elective 2: Woodworking

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare and Construct Timber Frameworks	Read and Interpret Construction Drawings for Timber Frameworks	8	10		2
	PC 1 identify structural requirements and load-bearing specifications from construction drawings				
	PC 2 interpret different types of timber framework designs, including traditional, prefabricated and CLT structures				
	PC 3 analyze measurements, dimensions and specifications for framework assembly				
	PC 4 identify key framework elements such as beams, posts and connectors				
	PC 5 ensure alignment and accuracy of construction plans before material preparation				
	Select and Prepare Timber for Framework Construction	8	15		2
	PC 6 determine the appropriate type of timber based on strength, durability and environmental conditions				
	PC 7 inspect timber for defects such as warping, knots and cracks				
	PC 8 cut, shape and size timber as per framework specifications using appropriate tools				
	PC 9 treat and coat timber to enhance durability and resistance to moisture, pests and decay				
	PC 10 assemble and reinforce joints using screws, nails, bolts or adhesives				
	PC 11 comply with industry standards and best practices when working with timber				
	Construct Timber Frameworks using Traditional Techniques	7	15		3
	PC 12 measure and mark locations for beams, posts and supports according to drawings				
	PC 13 assemble framework structures using traditional joinery techniques such as mortise and tenon, lap joints and dowel joints				
	PC 14 secure framework components using manual nailing, screwing and bolting methods				
	PC 15 use hand tools such as chisels, saws and drills for shaping and assembling timber parts				
	PC 16 ensure accurate spacing and reinforcement of framework components for stability				
	PC 17 install timber bracing and supports to enhance structural integrity				
	PC 18 inspect and correct any misalignment or structural inconsistencies in the framework				
	Construct Timber Frameworks using Modern Techniques	7	20		3
	PC 19 use prefabricated timber components for faster and more efficient construction				
	PC 20 integrate engineered wood products such as plywood and LVL (Laminated Veneer Lumber) in framework assembly				
	PC 21 apply Cross-Laminated Timber (CLT) for structural strength and sustainability				
	PC 22 use digital tools such as laser levels and CAD-based measurements for precise framework installation				
	PC 23 install prefabricated connectors and fasteners for quicker and more secure assembly				
	PC 24 ensure proper alignment and weight distribution when working with large-scale prefabricated timber elements				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Construct Wooden Frames for Structural Elements	Construct Wooden Frames for Foundations and Flooring	5	15		2
	PC 1 identify structural requirements for wooden frame foundations and flooring.				
	PC 2 select appropriate timber based on strength, load-bearing capacity and environmental conditions.				
	PC 3 measure, cut and assemble wooden beams, joists and subfloor components.				
	PC 4 secure foundation frames using nails, screws, bolts or brackets.				
	PC 5 ensure accurate spacing and alignment of wooden floor joists to support load distribution.				
	PC 6 install moisture barriers or protective coatings to prevent wood degradation.				
	PC 7 reinforce connections using bracing or additional support elements.				
	PC 8 conduct inspections to verify stability and structural integrity before installation.				
	Use Prefabricated Timber Systems	15	25		4
	PC 9 select and prepare engineered wood products such as cross-laminated timber (CLT) and laminated veneer lumber (LVL).				
	PC 10 assemble prefabricated timber frames using modular construction techniques.				
	PC 11 apply advanced fastening systems such as metal connectors and adhesives for enhanced durability.				
	PC 12 align and position prefabricated components using laser levels and digital measuring tools.				
	PC 13 integrate prefabricated frames into structural elements with minimal modifications.				
	Use CNC Precision Cutting	10	20		4
	PC 14 determine the dimensions and specifications of wooden door and window frames.				
	PC 15 select high-quality timber suitable for frame construction.				
	PC 16 use CNC (computer numerical control) machines for precision cutting and shaping of wooden components.				
	PC 17 ensure accurate mortise and tenon joints, grooves and notches for seamless assembly.				
	PC 18 assemble door and window frames using clamps, fasteners and adhesives.				
	PC 19 align frames precisely within wall openings to prevent warping or misalignment.				
	PC 20 install reinforcements such as weatherproofing strips and insulation materials.				
	PC 21 conduct finishing operations such as sanding, sealing and varnishing for durability.				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Install Interior Wooden Partitions and Panels	Set Up Interior Wooden Partitions	6	12		2
	PC 1 select appropriate timber, plywood, MDF or engineered wood for partition construction.				
	PC 2 measure and mark partition dimensions using precision tools.				
	PC 3 cut wooden sections using saws, routers and CNC machines for accuracy.				
	PC 4 assemble and secure wooden partition frames with mortise and tenon, dowel or screw joints.				
	PC 5 integrate steel or aluminum reinforcements for enhanced durability.				
	PC 6 align and fix partitions to walls, floors and ceilings using brackets, adhesives and mechanical fasteners.				
	PC 7 install adjustable or removable wooden partitions for flexible space management.				
	PC 8 integrate soundproofing and insulation materials within partition cavities.				
	PC 9 check vertical alignment and structural stability before finalizing installation.				
	Install Wooden Panels	12	24		4
	PC 10 select and source high-quality wooden panels suited for interior applications.				
	PC 11 prepare and treat wooden panels with sanding, priming or moisture-proof coatings.				
	PC 12 measure and cut panels to fit designated wall, ceiling or partition surfaces.				
	PC 13 install panels using concealed clips, adhesives, mechanical fasteners or interlocking systems.				
	PC 14 align and secure panels to maintain uniformity, stability and smooth finishing.				
	PC 15 integrate acoustic panels for enhanced sound absorption in designated spaces.				
	PC 16 incorporate decorative woodwork such as moldings, carvings or laminated finishes.				
	PC 17 apply expansion gaps to prevent warping due to temperature or humidity changes.				
	PC 18 install fire-retardant or anti-bacterial coatings where required.				
	Install Modular and Prefabricated Partition Systems	6	12		2
	PC 19 assemble modular wooden partition panels in workshop settings for on-site installation.				
	PC 20 use prefabricated interlocking wooden sections for quicker assembly.				
	PC 21 incorporate built-in storage or shelving units within partition designs.				
	PC 22 align and install modular partitions with minimal on-site cutting or modifications.				
	PC 23 integrate sliding, folding or movable partitions for adaptable interior layouts.				
	Apply Finishing and Surface Treatments	6	12		2
	PC 24 sand and smooth wooden partitions and panels before applying finishes.				
	PC 25 apply stains, paints, polishes or sealants for enhanced durability and aesthetics.				
	PC 26 integrate protective coatings for fire resistance, waterproofing or anti-termite protection.				
	PC 27 ensure even coating application using brushes, rollers or spray techniques.				
	PC 28 inspect final surface finish for defects, inconsistencies or unevenness				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Assemble and Dismantle Shuttering for Concreting	Construct Wooden Formwork for Concrete Structures	6	15		2
	PC 1 select appropriate timber, plywood or engineered wood for formwork construction.				
	PC 2 measure and cut formwork components to required dimensions using hand tools and power tools.				
	PC 3 assemble wooden panels, beams and braces to create a sturdy framework for pouring concrete.				
	PC 4 secure formwork components with nails, screws or clamps to maintain shape and strength.				
	PC 5 install bracing and support structures to prevent deformation during concreting.	8	15		3
	Install Formwork for Various Structural Elements				
	PC 6 position and secure wooden formwork for columns, beams, slabs and walls.				
	PC 7 ensure proper alignment and leveling using spirit levels and measuring tools.				
	PC 8 adjust and reinforce joints to prevent leakage or displacement of concrete.				
	PC 9 apply release agents to the inner surfaces of the formwork for easy removal.	8	15		3
	Use Prefabricated Shuttering Methods				
	PC 10 select and assemble modular prefabricated shuttering panels for rapid installation.				
	PC 11 use aluminum, steel or plastic-coated formwork for repeated usage.				
	PC 12 integrate interlocking formwork systems for faster setup and dismantling.				
	PC 13 adjust prefabricated panels to suit varying dimensions and design specifications				
	Dismantle Formwork after Concrete Curing	8	15		2
	PC 14 remove temporary supports and fasteners systematically to avoid structural damage.				
	PC 15 carefully detach wooden or prefabricated panels without chipping or cracking concrete.				
	PC 16 clean and store reusable shuttering components for future use.				
	PC 17 inspect formwork materials for wear and damage before reassembly.				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Construct and Install Wooden Structural Features	Construct Wooden Staircases and Landings	6	15		2
	PC 1 select appropriate wood types for staircase treads, risers and stringers.				
	PC 2 measure and cut wooden components according to staircase design and dimensions.				
	PC 3 assemble and secure staircases using joinery techniques such as mortise and tenon or dovetail joints.				
	PC 4 install supporting framework and reinforcements to ensure staircase stability.	8	15		3
	Install Wooden Railings and Balustrades				
	PC 5 measure and mark positions for railing posts, handrails and balusters.				
	PC 6 cut and shape wooden components to match the design specifications.				
	PC 7 assemble and secure railings using wooden dowels, screws or adhesives.				
	PC 8 align and fasten balustrades to staircases or balconies with proper anchoring.	8	15		3
	Install Wooden Beams and Load-Bearing Elements				
	PC 9 cut and join wooden beams using traditional and modern woodworking methods.				
	PC 10 assemble and install wooden load-bearing structures for ceilings and partitions.				
	PC 11 reinforce beams with metal brackets or engineered wood supports for additional strength.				
	PC 12 integrate prefabricated wooden structural components for faster installation.	8	15		2
	Assemble Decorative Wooden Frameworks				
	PC 13 cut and shape wooden components for aesthetic and architectural designs.				
	PC 14 assemble wooden frameworks for ceilings, archways and wall paneling.				
	PC 15 install decorative wooden panels and moldings to enhance visual appeal.	8	15		2
	PC 16 use CNC precision cutting for intricate and customized wooden designs.				
NOS Total		30	60		10

Elective 3: Metal working

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Plan and Execute Metal Fabrication	Read and Interpret Fabrication Drawings	6	12		2
	PC 1 read and interpret technical drawings, blueprints and material specifications.				
	PC 2 identify dimensions, tolerances and material requirements for metal fabrication.				
	PC 3 prepare fabrication plans based on project requirements and structural integrity.	6	12		2
	Prepare Metal Components for Fabrication				
	PC 4 select appropriate metal types based on strength, corrosion resistance and application.				
	PC 5 measure, mark and cut metal sheets, rods and beams according to specifications.	10	20		3
	PC 6 apply shaping techniques such as bending, rolling and pressing for component preparation.				
	Use CAD and CAM Software for Precision Fabrication				
	PC 7 design metal components and assemblies using CAD software.	8	16		3
	PC 8 generate CNC machining programs using CAM software for automated cutting and shaping.				
	PC 9 simulate and verify machine operations to ensure accuracy before production.				
	Apply Automation for Efficient Fabrication	8	16		3
	PC 10 operate CNC machines for precision metal cutting, drilling and shaping.				
	PC 11 integrate robotic welding and automated assembly systems in fabrication.				
	PC 12 monitor and adjust automated fabrication processes for consistency and efficiency.				
NOS Total		30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Cut, Bend and Assemble Reinforcement Bars	Cut Reinforcement Bars	6	12		2
	PC 1 measure and mark rebar lengths according to structural drawings.				
	PC 2 use manual tools like hacksaws, bolt cutters and rebar shears for small-scale cutting.				
	PC 3 operate automated rebar cutting machines for precise and efficient processing.	6	12		2
	Bend Reinforcement Bars				
	PC 4 apply manual bending techniques using rebar bending levers and hydraulic benders.				
	PC 5 set up and operate CNC-controlled bending machines for precision bends.				
	PC 6 shape rebars to required angles and curves based on reinforcement detailing.	10	20		3
	Assemble and Tie Reinforcement Structures				
	PC 7 position rebars in the correct layout based on structural reinforcement plans.				
	PC 8 use binding wire and mechanical couplers for secure connections.	8	16		3
	PC 9 install reinforcement mesh, cages and columns for concrete structures.				
	Advanced Shuttering and Alignment Techniques				
	PC 10 assemble steel formwork using Mivan shuttering methods for faster construction.	30	60		10
	PC 11 apply laser alignment techniques to ensure accurate reinforcement placement.				
	PC 12 inspect and adjust reinforcement structures before concrete pouring.				
NOS Total					

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Install and Weld Metal Structural Components	Prepare and Install Metal Structural Components	6	12		2
	PC 1 measure, mark and cut metal sheets and structural sections to required dimensions using hand tools and CNC cutting machines.				
	PC 2 position and secure metal components using clamps, jigs and tack welding.				
	PC 3 drill and fasten structural metal sections using bolts, rivets and welding.				
	PC 4 align and level metal structures using laser-guided tools.				
	PC 5 install temporary supports to hold structural components in place during assembly	6	12		2
	Install Sheet Metal for Structural and Finishing Applications				
	PC 6 assemble sheet metal for walls, roofing and façade applications.				
	PC 7 use riveting, bolting and welding methods to secure sheet metal structures.				
	PC 8 shape and bend sheet metal using hydraulic press brakes and rollers.				
	PC 9 install expansion joints to accommodate structural movement.				
	PC 10 apply corrosion-resistant coatings such as galvanization and powder coating.				
	PC 11 reinforce sheet metal structures with internal bracing and stiffeners.				

	Perform Welding Techniques	10	20		3
	PC 12 execute shielded metal arc welding (SMAW) and gas metal arc welding (GMAW) for standard joints.				
	PC 13 apply tungsten inert gas (TIG) welding for precision and non-ferrous metals.				
	PC 14 perform submerged arc welding (SAW) for large-scale structural components.				
	PC 15 select appropriate filler metals and shielding gases for different welding applications.				
	PC 16 inspect welds for defects such as porosity, cracks and incomplete fusion.				
	PC 17 repair defective welds using grinding, rewelding and filler techniques.				
	PC 18 operate oxy-fuel cutting and welding equipment for onsite modifications.				
	Use Robotic and Automated Welding Systems	8	16		3
	PC 19 operate CNC-controlled and robotic welding systems for high-precision welding.				
	PC 20 program automated welding machines for repetitive production tasks.				
	PC 21 inspect and adjust weld parameters such as heat input, speed and electrode angle.				
	PC 22 perform laser welding and friction stir welding for specialized applications.				
	PC 23 integrate automated welding processes with real-time monitoring and quality control systems.				
	PC 24 troubleshoot robotic welding system errors and recalibrate equipment.				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Apply Surface Coatings and Treatments	Prepare Metal Surfaces for Coating Applications	6	12		2
	PC 1 clean metal surfaces using chemical and mechanical methods to remove rust, grease and contaminants.				
	PC 2 use abrasive blasting, wire brushing and sanding to create an optimal surface profile.				
	PC 3 apply etching and priming treatments for better adhesion of coatings.				
	PC 4 inspect surfaces for defects such as pitting, scaling and oxidation before coating.				
	PC 5 mask off areas that should not be coated using tapes, stencils or temporary coverings.				
	Apply Protective Coatings to Metal Surfaces	6	12		2
	PC 6 apply liquid coatings such as primers, paints and varnishes using spray, brush and dip methods.				
	PC 7 use powder coating techniques for durable and uniform surface finishes.				
	PC 8 apply industrial coatings such as epoxy, polyurethane and fluoropolymers for enhanced protection.				
	PC 9 ensure even distribution and proper curing of coatings using heat or UV treatments.				

PC 10	check coating thickness and adhesion using testing tools such as micrometers and adhesion testers.				
Use Corrosion-Resistant Materials and Treatments					
PC 11	apply galvanization techniques, including hot-dip and electro-galvanization, to protect steel structures.	10	20		3
PC 12	use anodizing for aluminum components to enhance wear and corrosion resistance.				
PC 13	perform passivation treatments for stainless steel to prevent oxidation.				
PC 14	apply cathodic protection methods using sacrificial anodes and impressed current systems.				
PC 15	use chemical conversion coatings such as chromating and phosphating for improved surface properties.				
Perform Advanced Metal Surface Treatment Methods					
PC 16	apply thermal spraying techniques, including plasma, arc and flame spraying, for high-performance coatings.	8	16		3
PC 17	use physical vapor deposition (PVD) and chemical vapor deposition (CVD) for specialized coatings.				
PC 18	perform electroplating with metals like zinc, nickel and chromium for functional and decorative purposes.				
PC 19	conduct nano-coating applications for enhanced scratch resistance and self-cleaning properties.				
PC 20	integrate robotic and automated coating systems for precision and efficiency in large-scale production.				
NOS Total		30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Install Energy-Efficient Metal Cladding Systems	Prepare Surfaces for Cladding Installation	6	12		2
	PC 1 inspect and prepare the substrate by cleaning and leveling surfaces for cladding installation.				
	PC 2 select appropriate metal cladding materials such as aluminum, steel or composite panels based on project specifications.				
	PC 3 measure and mark the installation area using laser leveling tools for accurate alignment.				
	PC 4 cut and shape metal panels using mechanical and automated cutting tools for precision.				
	PC 5 apply primers and protective coatings to metal surfaces before installation.				
	Fit Metal Cladding Panels	6	12		2
	PC 6 install metal cladding panels using direct fixing, rail systems or concealed fasteners.				
	PC 7 integrate insulation materials such as mineral wool, polyurethane foam or vacuum-insulated panels (VIP) for thermal efficiency.				
	PC 8 use composite metal panels with pre-attached insulation layers for faster installation and improved performance.				
	PC 9 ensure airtight sealing of joints using high-performance sealants, tapes and thermal breaks.				
	PC 10 apply vapor barriers and breather membranes to prevent condensation and thermal bridging.				
	Ensure Energy Efficiency in Metal Structures	10	20		3
	PC 11 use cool metal roofing and cladding systems to enhance energy efficiency and reduce heat absorption.				
	PC 12 apply reflective coatings and surface treatments for solar heat reduction.				
	PC 13 integrate ventilated façade systems to improve thermal comfort and air circulation.				
	PC 14 install photovoltaic (PV) cladding systems to generate renewable energy from building exteriors.				
	PC 15 conduct thermal imaging tests to identify and rectify insulation gaps or heat leaks.				
	Advanced Installation and Finishing Techniques	8	16		3
	PC 16 use prefabricated modular metal cladding systems for faster and more efficient installation.				
	PC 17 apply 3D laser scanning and BIM (Building Information Modeling) for precise placement and material optimization.				
	PC 18 install self-healing and nano-coated metal cladding for enhanced durability and reduced maintenance.				
	PC 19 integrate smart building sensors into metal cladding for real-time thermal performance monitoring.				
	PC 20 ensure proper drainage and water management by incorporating weep holes and flashing systems.				
	NOS Total	30	60		10

Elective 4: Concreting

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare, Pour and Cure Concrete Structures	Read and Interpret Construction Drawings	6	12		2
	PC 1 analyze structural blueprints to determine concrete specifications and reinforcement details.				
	PC 2 identify load-bearing sections and reinforcement placements as per project requirements.				
	PC 3 calculate the quantity of concrete required based on mix proportions and structural dimensions.				
	PC 4 mark layout points for formwork placement using leveling tools and total stations.	6	12		2
	Prepare Materials and Mix Concrete				
	PC 5 select appropriate cement, aggregates and admixtures based on strength and workability requirements.				
	PC 6 measure and batch materials using weigh batching and volumetric batching methods.				
	PC 7 mix concrete manually, mechanically or using ready-mix concrete (RMC) plants for uniform consistency.				
	PC 8 adjust water-cement ratios and incorporate plasticizers or retarders to improve workability.				
	PC 9 test slump, workability and consistency of concrete before pouring.	6	12		2
	Pour and Place Concrete				
	PC 10 transport concrete using wheelbarrows, pumps or conveyors for efficient placement.				
	PC 11 pour concrete in layers to avoid segregation and cold joints.				
	PC 12 use self-compacting concrete (SCC) technology to eliminate the need for vibration.				
	PC 13 apply slip-form and jump-form techniques for continuous concreting in high-rise structures.	6	12		2
	PC 14 embed reinforcement bars, anchor bolts and conduits while placing concrete.				
	Compact Concrete				
	PC 15 use mechanical vibrators such as needle, surface and form vibrators to remove air voids.				
	PC 16 ensure uniform compaction to prevent honeycombing and weak zones.	6	12		2
	PC 17 apply pressure grouting techniques for filling voids in hardened concrete.				
	Cure Concrete				
	PC 18 apply traditional curing methods such as ponding, wet covering and water spraying.				
	PC 19 use curing compounds and self-curing concrete additives for moisture retention.				
	PC 20 cover concrete with plastic sheets or wet burlap to prevent rapid moisture loss.				
	PC 21 implement steam curing and accelerated curing methods for precast concrete elements.				
	PC 22 monitor curing temperatures and maintain optimal moisture levels for hydration.				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Perform Concreting for Structural Elements	Construct Reinforced Concrete Floors	6	12		2
	PC 1 prepare formwork and reinforcement layout as per structural design.				
	PC 2 place reinforcement bars, mesh or fiber reinforcement for strength and crack resistance.				
	PC 3 mix and pour concrete using appropriate workability and slump control.				
	PC 4 compact concrete using mechanical vibrators to eliminate air pockets.				
	PC 5 level and finish the surface using trowels, screeds or power floaters				
	Use Insulated Concrete Formwork (ICF)	6	12		2
	PC 6 assemble insulated concrete formwork (ICF) for wall construction.				
	PC 7 place reinforcement bars within ICF systems for structural integrity.				
	PC 8 pour concrete into the ICF framework, ensuring uniform flow and consolidation.				
	PC 9 remove excess air using vibration techniques to prevent voids and segregation.				
	PC 10 allow concrete to cure within the insulated formwork for enhanced thermal efficiency.				
	Construct Beams and Columns	10	20		3
	PC 11 install temporary supports and scaffolding for load-bearing elements.				
	PC 12 fix reinforcement cages inside beam and column formworks.				
	PC 13 pour concrete in layers while ensuring even distribution around reinforcements.				
	PC 14 monitor alignment and positioning using plumb bobs and laser levels.				
	PC 15 cure concrete beams and columns using wet hessian cloth or membrane curing				
	Apply High-Performance Concrete (HPC)	8	16		3
	PC 16 mix high-performance concrete with silica fume, fly ash or polymer additives.				
	PC 17 use self-compacting concrete (SCC) to enhance workability and reduce segregation.				
	PC 18 implement post-tensioning techniques for structural stability.				
	PC 19 conduct non-destructive testing (NDT) to assess concrete strength and uniformity.				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry Out Reinforced Concrete Works	Prepare for Reinforced Concrete Works	6	12		2
	PC 1 select appropriate reinforcement materials, including steel bars, mesh and fiber reinforcements.				
	PC 2 measure and cut reinforcement bars and mesh to required lengths using cutting tools.				
	PC 3 install shuttering and temporary supports for reinforced concrete components.	6	12		2
	Install and Secure Reinforcement Materials				
	PC 4 position reinforcement bars as per structural design and spacing requirements.				
	PC 5 tie reinforcement bars using binding wire to maintain structural layout.				
	PC 6 fix stirrups, spacers and chairs to maintain proper concrete cover and alignment.				
	PC 7 install reinforcement mesh or cages for slabs, beams and columns.				
	PC 8 apply mechanical couplers and lapping techniques for extended reinforcement bars.				
	Use Fiber-Reinforced Concrete (FRC)	10	20		3
	PC 9 select appropriate fiber types such as steel, glass, synthetic or natural fibers.				
	PC 10 mix fibers into concrete at specified proportions using manual or mechanical methods.				
	PC 11 pour and place fiber-reinforced concrete in slabs, beams and foundations.				
	PC 12 compact fiber-reinforced concrete using vibrators to eliminate air voids.				
	PC 13 monitor fiber distribution and ensure uniform dispersion during pouring.				
	Implement Reinforcement Techniques	8	16		3
	PC 14 apply post-tensioning systems for added strength in large structural elements.				
	PC 15 use welded wire mesh for enhanced crack resistance in slabs and walls.				
	PC 16 reinforce joints and corners with additional rebar or mesh layers.				
	PC 17 integrate shear reinforcement for beams and columns to prevent failure.				
	PC 18 inspect reinforcement layout before concreting to ensure compliance with design.				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Repair and Restore Concrete Surfaces	Prepare Concrete Surfaces for Repair	6	12		2
	PC 1 inspect concrete surfaces for cracks, spalling, erosion and other defects.				
	PC 2 identify causes of concrete deterioration such as water ingress, chemical exposure or structural stress.				
	PC 3 clean damaged areas using mechanical or chemical methods to remove loose material.				
	PC 4 mark and outline repair zones according to structural repair plans.	6	12		2
	Repair Concrete Surfaces Using Traditional Methods				
	PC 5 mix and apply cementitious repair mortar for minor surface damages.				
	PC 6 perform patch repairs using rapid-setting concrete for small cracks and voids.				
	PC 7 apply bonding agents and primers to enhance adhesion before repairs.				
	PC 8 use formwork and shuttering techniques for deep repairs and re-casting damaged sections.	10	20		3
	Apply Nano-Concrete Technology for Surface Repairs				
	PC 9 mix and apply nano-concrete materials for enhanced durability and crack resistance.				
	PC 10 use self-healing concrete mixtures infused with nano-particles for micro-crack sealing.				
	PC 11 reinforce repaired areas with nano-coatings to improve water resistance and longevity.				
	PC 12 apply advanced polymer-modified concrete for enhanced surface performance	8	16		3
	Perform Crack Sealing and Surface Refinishing				
	PC 13 inject epoxy or polyurethane sealants into deep cracks for structural reinforcement.				
	PC 14 apply flexible sealants for expansion joints and surface movement cracks.				
	PC 15 grind and smooth repaired areas to match surrounding surfaces.				
	PC 16 use high-performance coatings and resurfacing compounds for final finishing.	30	60		10
	NOS Total				

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Construct and Install Precast Concrete Structures	Construct Precast Concrete Elements	6	12		2
	PC 1 prepare and assemble formwork for casting precast concrete components.				
	PC 2 mix and pour concrete into molds, ensuring proper vibration to remove air pockets.				
	PC 3 use high-performance concrete mixes for strength and durability.				
	PC 4 apply curing techniques such as steam curing to enhance early strength.				
	PC 5 demold precast components safely without causing surface damage.				
	Transport and Handle Precast Elements	6	12		2
	PC 6 lift and move precast components using cranes, slings and lifting anchors.				
	PC 7 ensure proper stacking and securing of precast elements during transportation.				
	PC 8 use protective coverings and supports to prevent damage during handling.				
	PC 9 follow weight distribution guidelines to maintain load balance during transit.				
	Install Precast Concrete Structures	10	20		3
	PC 10 position precast elements using laser alignment and precision measurement tools.				
	PC 11 secure precast components using dowels, grout or mechanical connections.				
	PC 12 apply post-installation finishing, including joint sealing and surface treatments.				
	PC 13 ensure structural alignment and level adjustments before final fixing.				
	Ensure Quality Control in Precast Installation	8	16		3
	PC 14 inspect precast components for cracks, voids or dimensional deviations.				
	PC 15 verify reinforcement placement and curing compliance before installation.				
	PC 16 test load-bearing capacity of installed precast structures.				
	PC 17 document installation procedures and maintain records for compliance				
	NOS Total	30	60		10

Option 1: Sheet Metal Fitting

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Cut, Shape and Install Sheet Metal Structures	Interpret Drawings and Prepare Sheet Metal Materials	6	12		2
	PC 1 read and interpret technical drawings and blueprints for sheet metal fabrication.				
	PC 2 measure and mark metal sheets using scribes, calipers and templates.				
	PC 3 select appropriate sheet metal materials based on project requirements.				
	PC 4 ensure surface preparation, including cleaning and deburring before fabrication.				
	Cut and Shape Sheet Metal Components	6	12		2
	PC 5 cut sheet metal using hand tools such as snips, shears and hacksaws.				
	PC 6 operate CNC plasma, laser or waterjet cutting machines for precision cutting.				
	PC 7 bend and form sheet metal using press brakes and rolling machines.				
	PC 8 use jigs, molds and templates for shaping curved and complex components.				
	Assemble and Join Sheet Metal Structures	10	20		3
	PC 9 align and position sheet metal components according to specifications.				
	PC 10 perform mechanical fastening using rivets, bolts and screws.				
	PC 11 weld sheet metal parts using TIG, MIG and spot welding techniques.				
	PC 12 apply soldering and brazing for non-ferrous sheet metal joints.				
	Install and Finish Sheet Metal Structures	8	16		3
	PC 13 secure sheet metal panels onto structural frames using adhesive bonding or fasteners.				
	PC 14 apply surface treatments such as galvanizing, powder coating or anti-rust sprays.				
	PC 15 inspect and test fabricated sheet metal components for alignment and durability.				
	PC 16 carry out minor repairs and adjustments for proper fitting.				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Assemble and Fabricate Sheet Metal Structures Using Advanced Techniques	Prepare Sheet Metal Components for Assembly	6	12		2
	PC 1 measure, mark and cut sheet metal parts according to specifications.				
	PC 2 remove burrs, rust and surface contaminants for proper fitting.				
	PC 3 align and position components using jigs, clamps and fixtures.				
	PC 4 select appropriate joining methods based on material type and application.				
	Assemble Sheet Metal Components	6	12		2
	PC 5 use mechanical fastening methods such as riveting, bolting and clinching.				
	PC 6 apply adhesive bonding techniques for non-welded assembly.				
	PC 7 perform manual welding techniques such as MIG, TIG and spot welding.				
	PC 8 integrate robotic welding systems for precision and efficiency in large-scale assembly.				
	Ensure Structural Integrity and Alignment of Assembled Components	10	20		3
	PC 9 check for dimensional accuracy and fitment before final joining.				
	PC 10 use laser alignment tools and digital measurement techniques.				
	PC 11 reinforce joints with additional support structures when required.				
	PC 12 conduct non-destructive testing (NDT) such as ultrasonic or X-ray inspection.				
	Optimize Automated Welding and Assembly Systems	8	16		3
	PC 13 set up and calibrate robotic welding equipment for automated operations.				
	PC 14 monitor real-time data and adjust settings for quality control.				
	PC 15 apply AI-assisted welding techniques to enhance precision and reduce material wastage.				
	PC 16 troubleshoot common issues in automated welding and assembly processes.				
NOS Total		30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Apply Surface Treatments and Coatings to Sheet Metal	Prepare Sheet Metal Surfaces for Coating Applications	6	12		2
	PC 1 clean and remove dirt, grease and oxides from metal surfaces.				
	PC 2 use mechanical, chemical or abrasive methods for surface preparation.				
	PC 3 apply primers and base coatings to enhance coating adhesion.				
	PC 4 ensure proper surface roughness and profile before coating.				
	Apply Protective Coatings to Sheet Metal	6	12		2
	PC 5 use traditional coating methods such as painting, powder coating and anodizing.				
	PC 6 apply nano coatings for enhanced surface properties such as hydrophobicity and UV resistance.				
	PC 7 perform electroplating and galvanizing to improve corrosion resistance.				
	PC 8 coat metal surfaces with heat-reflective and self-cleaning materials.				
	Ensure Even Application and Curing of Coatings	10	20		3
	PC 9 operate spray guns, dip-coating systems or automated application equipment.				
	PC 10 control coating thickness and uniformity for functional and aesthetic requirements.				
	PC 11 ensure proper curing through air drying, baking or UV exposure.				
	PC 12 inspect finished coatings for defects such as bubbles, cracks or uneven layers.				
	Enhance Sheet Metal Properties Using Nano-Technology	8	16		3
	PC 13 apply nano-polymer coatings for improved chemical and mechanical resistance.				
	PC 14 use anti-fingerprint and self-healing coatings for high-traffic surfaces.				
	PC 15 integrate conductive coatings for electromagnetic shielding applications.				
	PC 16 test coated surfaces for adherence, wear resistance and environmental durability.				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Ensure Quality Control and Precision in Sheet Metal Fabrication	Perform Checks on Fabricated Sheet Metal Components	6	12		2
	PC 1 measure and verify dimensions using calipers, micrometers and coordinate measuring machines (CMM).				
	PC 2 ensure sheet metal parts meet specified tolerances and geometric accuracy.				
	PC 3 inspect edges, bends and weld joints for consistency.				
	PC 4 adjust fabrication processes based on measurement deviations.	6	12		2
	Conduct Visual and Non-Destructive Testing				
	PC 5 inspect surfaces for scratches, dents and corrosion.				
	PC 6 perform ultrasonic, X-ray and dye penetrant testing for weld integrity.				
	PC 7 detect micro-cracks, porosity and structural weaknesses.				
	PC 8 use thermal imaging techniques to assess material stress and defects.	10	20		3
	Apply Precision Techniques				
	PC 9 calibrate and maintain CNC cutting, bending and punching machines.				
	PC 10 use laser and waterjet cutting for precision edge finishing.				
	PC 11 implement AI-based quality inspection systems for real-time error detection.				
	PC 12 optimize robotic welding processes to reduce defects and rework.	8	16		3
	Maintain Quality Control Documentation and Compliance Records				
	PC 13 record inspection data and deviations in digital quality logs.				
	PC 14 analyze production reports for process improvements.				
	PC 15 ensure compliance as per Bureau of Indian Standards Code (e.g: ISO 9001).				
	PC 16 implement corrective actions for recurring fabrication issues.				
NOS Total		30	60		10

Option 2: Mivan Shuttering: Aluminium Formwork

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Assemble Aluminium Formwork Systems	Prepare and Organize Aluminium Formwork Components	6	12		2
	PC 1 inspect and sort formwork panels based on design specifications.				
	PC 2 transport and position panels using mechanical lifting aids.				
	PC 3 align formwork panels according to layout drawings.				
	PC 4 ensure interlocking and secure connections between panels.				
	Assemble Aluminium Formwork Panels into Modular Units	6	12		2
	PC 5 align panels according to design specifications using manual and mechanical positioning.				
	PC 6 connect panels using locking pins, wedges and tie rods for structural stability.				
	PC 7 verify interlocking mechanisms to prevent misalignment during handling.				
	PC 8 ensure proper joint sealing to prevent concrete leakage during later stages.				
	Use Automated Tools for Precise Alignment and Positioning	10	20		3
	PC 9 operate laser alignment systems for vertical and horizontal accuracy.				
	PC 10 adjust formwork panels using hydraulic and pneumatic positioning tools.				
	PC 11 integrate digital levelling sensors for real-time monitoring.				
	PC 12 ensure proper spacing for reinforcement bars and concrete pouring.				
	Perform Preliminary Stability and Alignment Checks	8	16		3
	PC 13 inspect completed formwork modules for alignment accuracy.				
	PC 14 adjust panel spacing to accommodate reinforcement bars.				
	PC 15 verify that all fasteners and support systems are securely attached.				
	PC 16 prepare assembled units for transport to the construction site.\				
	PC 17 verify panel dimensions, surface finish and locking mechanisms before assembly				
	PC 18 inspect automated alignment and positioning tool calibration to ensure precision				
	PC 19 conduct trial assembly to check panel fitment before final installation				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Install and Secure Aluminium Formwork on Construction Sites	Prepare the Site and Position Formwork Panels	6	12		2
	PC 1 prepare the site by ensuring clean, level and stable ground conditions				
	PC 2 transport and handle Mivan aluminium panels using safe lifting techniques				
	PC 3 position formwork panels according to construction drawings and alignment marks				
	Assemble and Secure Formwork Components	6	12		2
	PC 4 interlock panels securely using tie rods, pins, wedges and props				
	PC 5 install formwork supports, kicker plates and braces for stability				
	PC 6 ensure proper vertical and horizontal alignment using laser-guided tools				
	Apply Necessary Treatments and Reinforcements	10	20		3
	PC 7 apply release agents to prevent concrete adhesion to aluminium panels				
	PC 8 check and reinforce joints and panel connections to prevent leakage				
	PC 9 integrate service conduits, openings and inserts within the formwork system				
	Inspect and Finalize Installation	8	16		3
	PC 10 verify the rigidity and strength of the installed formwork before concrete pouring				
	PC 11 conduct final alignment checks and adjustments using precision measuring tools				
	PC 12 confirm compliance with construction drawings and load-bearing requirements				
	PC 13 check panel-to-panel connections, tie rods and bracing systems for stability				
	PC 14 use laser alignment tools to ensure proper verticality and leveling				
	PC 15 verify sealing of form joints to prevent concrete leakage and misalignment				
	NOS Total	30	60		10

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Perform Concrete Pouring and Removal of Aluminium Formwork	Prepare for Concrete Pouring	6	12		2
	PC 1 inspect and ensure formwork is secured, aligned and free from gaps				
	PC 2 apply form release agents to prevent concrete adhesion to aluminium panels				
	PC 3 check for installed reinforcements, service conduits and embedded components	6	12		2
	Execute Concrete Pouring Operations				
	PC 4 ensure concrete mix consistency and workability before pouring				
	PC 5 pour concrete uniformly using pumps or direct discharge, ensuring proper flow				
	PC 6 use vibrators (mechanical or needle) to remove air pockets and enhance strength				
	PC 7 monitor concrete consistency, setting time and surface level during pouring	10	20		3
	Curing and Monitoring				
	PC 8 cover and protect freshly poured concrete from premature drying and shrinkage				
	PC 9 apply moist curing methods or chemical curing compounds for strength development				
	PC 10 conduct early-stage strength tests to determine safe removal timing				
	PC 11 Monitor form stability and alignment during concrete vibration	8	16		3
	Remove Aluminium Formwork Safely				
	PC 12 check concrete strength and curing progress before dismantling				
	PC 13 loosen and remove panels, tie rods and bracings in a sequence to avoid damage				
	PC 14 use panel extractors, hydraulic jacks or manual tools to detach formwork				
	PC 15 inspect concrete surfaces for defects and carry out necessary touch-ups	30	60		10
	NOS Total				

Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering and interpreting information to evaluate the Candidate on the required competencies of the program.

1. Assessment System Overview:

Assessment is done through ICES affiliated Assessment Agencies. Assessors are trained & certified by ICES after Training of Assessor (ToA) program. Assessments are conducted to gauge and assess the trainee's skill and knowledge competency in the specified areas.

The assessment will have both theory, practical and viva components as per ratio specified in each NOS for **Construction Fabricator** job role.

During the practical task, trainees are assessed on their workmanship, quality of finished product and time management. They will be graded for all their assessments based on the approved assessment strategy which is signed off by ICES. The Assessor submits an assessment plan to ICES prior to assessments.

The assessment plan contains the following information:

- What will be assessed, i.e. the competency based on each NOS based on theory, practical and viva questions
- How assessment will occur i.e. methods of assessment
- When the assessment will occur
- Duration of assessment
- Where the assessment will take place i.e. context of the assessment (workplace/simulation)
- The criteria for decision making i.e. those aspects that will guide judgments
- Where appropriate, any supplementary criteria are used to make a judgment on the level of performance.

ICES will be monitoring thoroughly the complete Assessment process.

2. Testing Environment:

- Training partner shares the batch start date and end date, number of trainees and the job role.
- Assessment will be fixed for a day after the end date of training. It could be next day or later. Assessment will be conducted at the training venue/test center only.
- The knowledge/theory assessments are conducted with proper seating arrangements with enough space between the candidates to prevent mal practicing.
- Question set for Theory and Practical will be distributed to each candidate by the Assessor.
 - Theory testing will include MCQ type questions, pictorial questions etc. which will test the trainee on his theoretical knowledge of the subject.
 - Practical assessments will be conducted in the approved test centers. The training provider will ensure adequate tools and materials are available to conduct the practical test.
 - Viva Testing will be conducted during or post to the practical assessment by the assessor concerned. This Viva Assessment is applicable to understand the outcomes from OJT attended by the concerned candidate.
- One (1) Assessor is eligible to conduct assessments of a batch of maximum 30 candidates.
- The assessment must comprise of two components, namely:
 - Knowledge assessment (Theory and Viva assessment)

- Skill assessment (Practical / Hands-on Skill assessment)

3. Mode of assessment

- Demonstration/Practical Performance /Skill Assessment
- Synoptic multiple-choice question test for Theory Assessment
- Viva for Knowledge Assessment (Applicable to note the outcomes from OJT only)

4. Performance/skill assessment:

- The performance/skill assessment will be conducted through demonstration/practical
- For the practical test trainees are assessed through a given task, which they have to complete correctly for them to be marked as passed.
- The assessment is conducted in a simulated working environment. Due to this fact, the assessors must note that the naturally occurring evidence of competence is unavailable or infrequent. Simulation must be undertaken in a Realistic Working Environment which provides an environment that replicates the key characteristics of the workplace in which the skill to be assessed is normally employed.

5. Knowledge Assessment:

- The knowledge assessments are conducted through Theory (written) Test and Viva Test
- Synoptic test is used for this. It is an MCQ (Multiple Choice Question) test which is prepared externally and externally marked, meaning by agency having no link with training partners.
- The Viva test will be conducted by the assessor in the oral mode considering the communication and domain understanding of skills of trainees.
- The assessment strategy, weightage and duration of assessment for **Construction Fabricator** is summarized below

Assessment Type	Formative or Summative	Strategies	Weightage	Duration (hours)
Knowledge	Summative	MCQ	45	1 hour
Knowledge	Summative	Viva	10	1 hour
Skill	Summative	Structured practical Task	45	7 hours

6. Assessment Quality Assurance levels/Framework

- ICES has developed assessment criteria framework for each Qualification pack as per National Occupational Standards. The criteria framework includes weightages/marks for each criterion under knowledge and skill. The criteria ensure quality assurance as they ensure valid, consistent and fair assessments at all locations. Issued to the affiliated Assessment body. The Assessment Body develops questions based on ICES's approved assessment criteria.
- The training partner will intimate the time of arrival of the assessor and time of leaving the venue. Random spot checks/audit may be conducted by ICES to monitor assessment.
- Continuous Monitoring through virtual and In-person mode are conducted to ensure the assessment is conducted as per stipulated process
- Process and Technical audit of assessment batches by quality team are conducted to avoid errors in assessment process
- A well-defined comprehensive framework of NON-COMPLIANCE MATRIX is defined and implemented to identify the non-compliance made by assessor and AA and punitive actions are taken correspondingly.
- The capacity building sessions are conducted regularly for assessors and assessment agencies to update them about best practices in assessment

7. Types of evidence or evidence-gathering protocol:

- Evidence in the form of answer sheets in case of knowledge assessments (Theory only) is collected.
- For Practical and Viva assessments videos and photographs are prepared as evidence. These are submitted by the assessor to the assessment agency. ICES does random checks of the same with the participant/ trainee's ID and ascertains authenticity and validity of assessments.
- Post Assessment, the evidence are uploaded by Assessor to assessment agency and further assessment agency to ICES as per stipulated TAT
- Evidence are broadly photographic and video graphics in nature (Geo-Tagged)
- Results along with evidence to be submitted to ICES by the concerning Assessment Agency in the prescribed format and on Digital Format and Physical Format (As required)
- Results to be uploaded on SIDH and other relevant portals for collective data management.

8. Method of verification or validation:

- The process and technical audit of assessment batches are done by Awarding Body
- Attendance of each candidate is verified and it is ensured that only those candidates are assessed by assessors who are meeting the stipulated minimum percentage of attendance
- The result of each candidate is verified; it is verified that that result on SIP is matched with respect to summary sheet submitted by AAs
- Under detailed technical audit for sample batches, the knowledge and skill assessment results for each candidate are checked in technical aspect.
- All the evidence of batches are preserved on server of Awarding Body digital platform

9. On the Job:

- On job training (OJT), candidates undergo training and learning at actual workplace for a fixed period of time and a certain weightage of assessment is allocated out of total skill weightage of Qualification Pack for undergoing OJT as stipulated by ICES. This OJT score and assessors' end point score are combined to arrive at final Marking/grading of trainees' skill test. The OJT score is determined by Supervisor / Engineer / other authorized head of departments of relevant industry under which candidates undergo on job training.
- The Assessment is subject to take place only after submission of OJT data (in case of STT only) approved by concerned industry and training provider.
- The Hard copy of the OJT report (on trainings, outcomes, exposures learnt and feedback certified by Supervisor / Engineer / other authorized head of departments of relevant industry) will be submitted to the Assessor by the concerned candidate on the Assessment date only, failing which the candidate may not be allowed for attending the Assessment.
- As OJT is mandatory for this QP, the TP should ensure the correct submission of all relevant reports pertaining to OJT of each trained candidate. The Assessment agency is responsible for collecting all the relevant information and submit the same to ICES in future (if required).

Annexure: Acronym and Glossary

Acronym

Acronym	Description
NOS	National Occupational Standard(s)
NSQF	National Skills Qualification Framework
QP	Qualification Pack
TVET	Technical and Vocational Education and Training
MSDE	Ministry of Skill Development and Entrepreneurship
NCVET	National Council for Vocational Education and Training
NSDC	National Skill Development Corporation
ICES	Integrated Council for Entrepreneurship and Skilling (erstwhile The Institution of Civil Engineers Society)
AB	Awarding Body
AA	Assessment Agency
TP	Training Partner
TC	Training Centre
ITI	Industrial Training Institute
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NEP	New Education Policy
Q-File	Qualification File
MC	Model Curriculum
PC	Performance Criteria
KU	Knowledge and Understanding
GS	Generic Skills
PMKVY	Pradhan Mantri Kaushal Vikas Yojana

DDUGKY	Deen Dayal Upadhyaya Grameen Kaushalya Yojana
STT	Short Term Training
RPL	Recognition of Prior Learning
NAPS	National Apprenticeship Promotion Scheme
NQR	National Qualification Register
OJT	On the Job Training
NSQC	National Skill Qualification Committee
IS	Indian Standard
BBS	Bar Bending Schedule
RCC	Reinforced Cement Concrete
AAC	Autoclaved Aerated Concrete
CLC	Cellular Lightweight Concrete
PVC	Polyvinyl Chloride
HDPE	High-Density Polyethylene
GI	Galvanized Iron
MS	Mild Steel
SS	Stainless Steel
FRP	Fiber Reinforced Plastic
HSS	High-Speed Steel
MDF	Medium Density Fibreboard
HDF	High Density Fibreboard
WBP	Waterproof Boiling Proof (Plywood Grade)
MR	Moisture Resistant
CP	Commercial Plywood
LVL	Laminated Veneer Lumber
OSB	Oriented Strand Board
CNC	Computer Numerical Control

MIG	Metal Inert Gas Welding
TIG	Tungsten Inert Gas Welding
SMAW	Shielded Metal Arc Welding
GMAW	Gas Metal Arc Welding
GTAW	Gas Tungsten Arc Welding
FCAW	Flux Cored Arc Welding
NDT	Non-Destructive Testing
UT	Ultrasonic Testing
RT	Radiographic Testing
PT	Penetrant Testing
MT	Magnetic Particle Testing
W/C Ratio	Water–Cement Ratio
OPC	Ordinary Portland Cement
PPC	Pozzolanic Portland Cement
ISMC	Indian Standard Medium Channel
ISMB	Indian Standard Medium Beam
ISJB	Indian Standard Junior Beam
CIS	Cast-in-Situ
PCC	Plain Cement Concrete
AFS	Aluminium Formwork System
WTF	Wall Tie Fixture
DFC	Deck Formwork Component
TFP	Tie Rod Fixing Pin
EHS	Environment, Health and Safety
SOP	Standard Operating Procedure
PPE	Personal Protective Equipment
TRA	Task Risk Assessment

JSA	Job Safety Analysis
QA	Quality Assurance
QC	Quality Control
HIRA	Hazard Identification and Risk Assessment
HPT	High Potential Task
BOQ	Bill of Quantities
DPR	Detailed Project Report
CAD	Computer-Aided Design
DWG	Drawing File Format
CL	Center Line
FGL	Finished Ground Level
FFL	Finished Floor Level
DL	Datum Level
RL	Reduced Level

Glossary

Term	Description
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.

Annexure: Career Progression

