QUALIFICATION FILE

Waste Optimisation Professional

☒ **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: 6

Submitted By:

Skill Council for Green Jobs

Chief Executive Officer

CBIP Building, Malcha Marg,

Chanakyapuri, New Delhi – 110021

Contact no. and mail: 9871119101, ceo@sscgj.in

Contents

Section 1: Basic Details

1.	**Qualification Name**	Waste Optimisation Professional	
2.	**Sector/s**	Environmental Science	
3.	**Type of Qualification:** ☐ **New** ☒ **Revised** ☐ **Has Electives/Options** ☐**OEM**	**NQR Code & version of existing/previous qualification:** **2020/ES/MOEF/03958 & version 1.0**	**Qualification Name of existing/previous version:** Certificate Course on Waste Management (Solid Waste, Biomedical Waste, Plastic Waste, E-Waste, Construction and Demolition Waste)
4.	a. **OEM Name** b. **Qualification Name** (Wherever applicable)		
5.	**National Qualification Register (NQR) Code &Version**	QG-06-ES-01755-2023-V1-SCGJ & version 1	6. **NCrF/NSQF Level:** 6
7.	**Award (Certificate/Diploma/Advance Diploma/ Any Other**	Certificate	
8.	**Brief Description of the Qualification**	India is facing major environmental challenges associated with waste generation and inadequate waste collection, transport, treatment and disposal. Current systems in India cannot cope with the volumes of waste generated by an increasing urban population, and impact on the environment and public health. The course will facilitate management of various categories of waste (e.g., solid waste, plastic, biomedical waste, e-waste, C&D waste etc.) including source segregation, collection, disposal, processing and recycling.	
9.	**Eligibility Criteria for Entry for Student/Trainee/Learner/Employee**	a. **Entry Qualification & Relevant Experience:** 4-year UG in relevant field with 1 year of relevant experience OR	

	3-year UG in relevant field with 2 year of relevant experience OR 12+ 2 year of diploma in relevant field with 3 year of relevant experience OR Previous relevant Qualification of NSQF Level 5.5 with 1.5 years of relevant experience OR Previous relevant Qualification of NSQF Level 5 with 3 years of relevant experience b. **Age:** 21 yrs	
10	**Credits Assigned to this Qualification, Subject to Assessment** (as per National Credit Framework (NCrF))	19	**10. Common Cost Norm Category:**
11	**Any Licensing requirements for Undertaking Training on This Qualification** (wherever applicable)	NA
12	**Training Duration by Modes of Training Delivery** (Specify **Total Duration** as per selected training delivery modes and as per requirement of the qualification)	☒Offline ☐Online ☐Blended

Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)
Classroom (offline)	210	210	150		570
Online					

(Refer Blended Learning Annexure for details)

13	**Aligned to NCO/ISCO Code/s** (if no code is available mention the same)	**NCO 2015 2143.0400** - Waste Management Engineer , Radioactive material **NCO 2015 2263.9900 -** Environmental and Occupational Health and hygiene Professionals, Other

14	**Progression path after attaining the qualification** (Please show Professional and Academic progression)	Vertical Progression: Senior Waste Management Professional
15	**Other Indian languages in which the Qualification & Model Curriculum are being submitted**	Hindi
16	**Is similar Qualification(s) available on NQR-if yes, justification for this qualification**	☐ Yes ☒ No
17	**Is the Job Role Amenable to Persons with Disability**	☒ Yes ☐ No **If "Yes", specify applicable type of Disability:** ☒ **Deaf** ☒ **Hard of Hearing** ☒ **Acid Attack Victims** ☒ **Dwarfism**
18	**How Participation of Women will be Encouraged**	Maximum participation of women will be encouraged and they will be promoted to participate in the course
19	**Are Greening/ Environment Sustainability Aspects Covered** (Specify the NOS/Module which covers it)	☒ Yes ☐ No
20	**Is Qualification Suitable to be Offered in Schools/Colleges**	**Schools ☒ Yes ☐ No Colleges ☒ Yes ☐ No**

21	**Name and Contact Details of Submitting / Awarding Body SPOC** (In case of CS or MS, provide details of both Lead AB & Supporting ABs)	**Name:** Dr. Praveen Saxena **Email:** ceo@sscgj.in **Contact No.:** 9871119101 **Website:** https://sscgj.in/	
22	**Final Approval Date by NSQC 31/01/2024**	**23. Validity Duration:** 3 years	**24. Next Review Date: 31/01/2027**

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Section 2: Module Summary

Mandatory NOS/s

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/N SQF 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.	Introduce to Solid Waste	SGJ/N4072: Version 1	Core	6	1	15	15	150		30	25	25			50	
2.	Identify characteristic, collection , transfer and transport and Separation and processing of solid waste	SGJ/N4073: Version 1	Core	6	2	15	45			60	9	41			50	
3.	Perform Composting and recycling, waste to energy and sanitary landfilling	SGJ/N4074: Version 1	Core	6	2	15	45			60	21	79			100	
4.	Introduce climate change in context to waste	SGJ/N4075: Version 1	Core	6	1	15	15			30	20	30			50	
5.	Plan and develop strategy for waste management focusing circular economy and plastic waste management	SGJ/N4076: Version 1	Core	6	2	15	45			60	52	48			100	
6.	Perform E-Waste Management.	SGJ/N4077: Version 1	Core	6	1	15	15			30	70	30			100	

#	NOS	Code	Category			Th	Pr				Th	Pr			Total
7.	Perform Construction and Demolition activities within waste management frameworks, alongside addressing Bio-Medical Waste Management concerns and explores the fundamental principles of Geographic Information Systems applied to waste management practices	SGJ/N4078 : Version 1	Core	6	2	30	30			60	52	48			100
8.	Employability Skills(90 hours)	DGT/VSQ/N0103: Version 1.0		5	3	90				90	20	30			50
9.	On the Job training									150					
Duration (in Hours) / Total Marks					19	210	210	150		**570**	269	331			600

NOS/s of Qualifications
(In exceptional cases these could be described as components

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

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

Assessment - Minimum Qualifying Percentage

Minimum Pass Percentage – Aggregate at qualification level: <u>70 %</u> *(Every Trainee should score specified minimum aggregate passing percentage at qualification level 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)*	Science Graduate/Postgraduate with two years' experience
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	*A PG/PhD degree and five years of experience in the relevant field*
3.	**Tools and Equipment Required for Training**	☒Yes ☐No (*If "Yes", details to be provided in Annexure) Handheld GPS, Cameras, compactors, Incinerator, Autoclave, shredder, etc.*
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)*	*A PG/PhD degree and five years of experience in the relevant field* NCVET approved/ empaneled Assessors
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	*A PG/PhD degree and seven years of experience in the relevant field* NCVET approved/ empaneled Assessors, experienced as invigilator
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	*A PG/PhD degree and ten years of experience in the relevant field* NCVET approved/ empaneled Assessors with 10 years of experience or experienced as invigilator for 10 years

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4.	**Assessment Mode** *(Specify the assessment mode)*	Online and offline both
5.	**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,
	Solid waste management Rules and bye laws are being framed in every district of the country as per the SWM Rules 2016. Similarly frameworks for e-waste, biomedical waste, construction and demolition waste, plastic waste are rolled out by the CPCB which States and ULB have to follow. Currently, the waste sector is undergoing transition from informal to formal due to central policies. Industries and authorities face problem in streamlining the waste management due to lack of skilled manpower who can understand the basic fundamentals of waste management like EPR and registration processes. There is an urgent need for spreading the awareness regarding waste management to the grass roots which is possible only by training students who have basic knowledge till undergraduate level. This group has the necessary motivation and enthusiasm to carry forward the practical knowledge of waste management. Therefore this short term course addresses the necessary skill gap in India. Source: https://cpcb.nic.in
2.	**Latest Market Research Reports or any other source (not older than 2 years) (Yes/No):**
	As per the Mordor Intelligence, the India Waste Management Market size is estimated at USD 32.09 billion in 2023, and is expected to reach USD 35.87 billion by 2028, growing at a CAGR of 2.25% during the forecast period (2023-2028). The Indian waste management market is witnessing a healthy growth rate, owing to the high population density and increased industrial activity, which is generating high amounts of wastes, both hazardous and non-hazardous.

Circular economy concept is relatively new to India. However, the concept is gaining prominence. The Indian waste management industry offers huge potential, as only 30% of the 75% recyclable waste is being recycled currently. Shortage of proper policies for collection, disposal, and recycling and the lack of efficient infrastructure are few of the many reasons leading to poor waste management in the country.

Many startups are coming up with innovative ideas to manage wastes, as well as convert them into valuable resources. However, India requires a fair |

	amount of knowledge to tackle the challenges plaguing this industry. *Source: https://www.mordorintelligence.com*
3.	**Government /Industry initiatives/ requirement (Yes/No):** Yes. Municipal Corporations, Hospitals, Central/State Pollution Control Board, Government and Private Agencies, Recycling Industries, Biomedical waste Incinerators, Privates Firms operating Incinerators, Construction Companies, etc. requiring such type of qualified persons.
4.	**Number of Industry validation provided:** 32
5.	**Estimated nos. of persons to be trained and employed:** 13 centers in India can conduct three batches per year. Each batch will have 15/20/30 students. So **585/780/1170** students can be trained each year out of which approximately **263/351/526** can be employed in Government and Industry initiatives
6.	**Evidence of Concurrence/Consultation with Line Ministry/State Departments:** *Concurred by Ministry of Environment, Forest and Climate Change, GoI*

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)*	Annexure: Evidence of Level
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	Annexure: Tools and Equipment (Lab Set-Up) Handheld GPS, Cameras, compactors, Incinerator, Autoclave, shredder, etc.
3.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	Annexure: Detailed Assessment Criteria (Mandatory)
4.	**Annexure:** Assessment Strategy *(Mandatory)*	Annexure: Assessment Strategy
5.	**Annexure:** Acronym and Glossary *(Optional)*	Annexure: Acronym and Glossary

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6.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	Attached
7.	**Supporting Document:** Career Progression *(Mandatory - Public view)*	Annexure: Career progression and OM
8.	**Supporting Document:** Occupational Map *(Mandatory)*	Waste Management Expert/Sanitation Expert/Self-sustainable Entrepreneur
9.	**Supporting Document:** Assessment SOP *(Mandatory)*	Annexure: Assessment Strategy

Annexure: Evidence of Level

Title/Name of qualification/component: Waste Optimisation Professional		Level: 6	
NSQF Domain	**Outcomes of the Qualification/Component**	**How the outcomes relate to the NSQF level descriptors**	**NSQF Level**
Professional Theoretical Knowledge/ Process	Trainees will gain advanced knowledge of waste management from source segregation, collection, disposal and processing. It would help them get a better understanding of the magnitude of the volume of the different types of wastes generated at the national level. Use of waste as a resource, energy recovery, and further processing into useful products is the main impact of waste on the environment.	Trainees are required to know different categories and waste streams in India. They could oversee and coordinate waste disposal, refuse collection and recycling activities in an efficient and environmentally friendly manner. They would also be able to prepare, plan and implement safe waste disposal strategies, manage budgets and ensure that all waste disposal activities comply with environmental laws and regulations	6
Professional and Technical Skills/ Expertise/ Professional Knowledge	The trainees will gain practical experience and knowledge of how to handle, collect, manage, and process different types of waste and how to channel them correctly. Through the training, trainees will gain the capabilities to identify environmental problems and improve environmental practices. It will also uncover solutions to these problems and issues in the workplace; and develop and implement a plan of action for all possible improvements.	As a trainee, the trainee displays professional knowledge of waste management and its environmentally responsible disposal for the protection and preservation of the environment. Their responsibilities would include managing solid waste collection, diversion, and recycling programs, as well as planning, assigning, reviewing, and evaluating the work done by the Solid Waste Program. Besides creating entrepreneurship among them, this would also help them form small teams across India for proper waste management.	6

Title/Name of qualification/component: Waste Optimisation Professional		Level: 6	
NSQF Domain	**Outcomes of the Qualification/Component**	**How the outcomes relate to the NSQF level descriptors**	**NSQF Level**
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	The trainees must have the capability of handling and managing each type of waste independently and ensuring that it is properly disposed of and recycled. Their knowledge includes sustainable and non-sustainable waste management methods, and the importance of legislation in promoting best practices. As a result, they would be able to interact with different agencies. Their contribution should include formulation of by-laws for waste management in local municipalities. Additionally, they should be able to generate waste solutions.	Trainees can collect, sort, process, recycle specific waste categories, and create mass awareness to the general public about proper disposal. All waste disposal activities would comply with environmental laws and regulations, and they would be able to fulfill their responsibilities regarding health & safety.	6
Broad Learning Outcomes/ Core Skill	Through practical exposure, advanced training, and recycling operations, trainees acquire expertise in handling different waste categories. Additionally, trainees will learn about computers, GIS, and other software. Furthermore, they would be exposed to successful waste entrepreneurs	It will be possible for trainees to manage, collect, and recycle waste in accordance with India's waste management rules. By formulating and executing waste disposal plans that are efficient and effective, they could also monitor the process. As part of the training program, trainees will also be able to use GIS and GPS tools and applications for the collection and mapping of data.	6
Responsibility	As part of the training, trainees would be able to devise and administer waste management budgets, maintain statistical records and prepare reports, ensure compliance with current waste handling and transport legislation, and monitor pollution levels.	As trainees, the trainees would be able to supervise waste disposal plans and ensure compliance with the current legislation in the area of waste handling, disposal and transportation. There will be a responsibility on the trainee's part for improving the cleanliness, hygiene, and general quality of life for a clean and safe environment, as well as improving the general quality of life as a waste manager or entrepreneur. Furthermore, the trainee would also be responsible for the development of the group as a master	6

Title/Name of qualification/component: Waste Optimisation Professional			Level: 6	
NSQF Domain	**Outcomes of the Qualification/Component**		**How the outcomes relate to the NSQF level descriptors**	**NSQF Level**
			trainer and specialist.	

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment
Batch Size: 20 and 30

GSDP Course on Waste Optimisation Professional -Tools and Equipment

Category	Tools & Equipment	Specification	Quantity for specified 20 Batch size	Quantity for specified 30 Batch size
Personal Protective Equipment (PPE)	Safety Glasses	Protecting the eyes from dust, debris, and potential impacts	20	30
	Gloves	To reduce the risk of infection	20	30
	Mask	N95 or higher for dusty environments	20	30
	Boots	for work industry	20	30
	High-visibility Vest	for outdoor visibility	20	30
	Hard Hat (Helmets)	The hard hat is predominantly used in industrial and construction sites to safeguard the head from	20	30

		falling objects.		
	Hearing Protection	Earplugs or earmuffs	20	30
General Tools	Brooms and Dustpans	Use various sizes for different tasks	20	30
	Shovels and Rakes	Use for material movement or excavation	4(Group of 5 candidates)	6(Group of 5 candidates)
	Cylindrical & cubical containers	Used for transportation of waste	4(Group of 5 candidates)	6(Group of 5 candidates)
	Measuring Tape	Use during field visit	4(Group of 5 candidates)	6(Group of 5 candidates)
	Marking Pens	Permanent and non-permanent markers, various colors	20	30
	Safety Cones and Barriers	Bright orange cones and caution tape	20	30
	DSLR Camera	For photography & documentation	One set	One set
	First-aid Kit	For common treatment	One set	One set
	Weighing Machine	To measure the weight	4(Group of 5 candidates)	6(Group of 5 candidates)
	GPS	To determine the location	4(Group of 5 candidates)	6(Group of 5 candidates)
Classroom Aids	Whiteboard, Marker, Projector, Projector Screen, Pointer Presentation, Participants Audiovisual, aids	For classes	One set	One set

	and hands-off aids			
	Training kit, Handbook	For classes	20	30
	Laptop	For practical	4(Group of 5 candidates)	6(Group of 5 candidates)
Composting Tools	Thermometers	Compost-specific thermometer with wide range (-30°C to 80°C)	One set	One set
	Moisture Meters	Pin-type or probe-type moisture meter	One set	One set
	Waste Segregation container	For segregation of waste	One set	One set
Lab Tools	pH Meter	For analysis of pH of waste water	4(Group of 5 candidates)	6(Group of 5 candidates)
	BOD incubator	For analysis of BOD of waste water	One set	One set
	COD Reflux Assembly	For COD of waste water	One set	One set
	Hot oven	For dry water and wastewater, as some chemicals	One set	One set
	Gooch Assemble	For TSS and TDS analysis	One set	One set
Lab Glassware	BOD bottles	For BOD analysis	10 set for 20 batch size	15 set for 30 batch size
	Round Bottom flask	For COD analysis	10 set for 20 batch size	15 set for 30 batch size

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	Pippets	To check the quality of water and to measure the volume of chemical added to it	10 set for 20 batch size	15 set for 30 batch size
	Conical flask	For various purpose related to water test	4(Group of 5 candidates)	6(Group of 5 candidates)
	Measuring Cylinder 1ltr	For various parameter related to water analysis	One set	
	Beaker	For various purpose	500 ml 2 set	500 ml 3 set
	Desiccators	For drying purpose	One set	One set
	Digital Balance	TSS, TDS all reagent purpose	One set	One set
	Volumetric flask	For various purpose	1000 ml 2 set	1000 ml 3 set
Biogas Production and Utilization Tool and Equipment	Biogas Plant	For production of biogas	One set	One set
	Water Manometer (250 mm WC)	For measuring pressure and pressure drop	One set	One set
	Pressure Gauge (0 - 400 mm WC)	For measuring pressure and pressure drop	One set	One set
	Biogas Flowmeter (10 cum per hour)	For measuring the amount of biogas produced	One set	One set
	Thermometer (0 - 60 °C)	For monitoring temperature of inlet and outlet of Biogas Plant	One set	One set
	Biogas Burner/Chullah	For Cooking	One set	One set
	Biogas Lamp	For Lighting	One set	One set
	100% Biogas Generator Set	For Generating Electricity	One set	One set
	Tool Kit	For Biogas Plant and 100% Biogas Generator Set	One set	One set

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	Constant Pressure Biogas Storage System	for supply of Biogas	One set	One set

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Tool kit for the practical session

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	IL&FS Environmental Infrastructure and Services Limited (IEISL)	Hitesh Aggarwal	Project Manager	Block No 21, Hanuman Mandir Road, Jahangir Puri, Delhi – 110033	09910101389	hitesh.aggarwal@ilfsindia.com	N/A
2	Thiagarajar College, Madurai	Dr.Kannan	Head i/c, Department of Botany	Department of Botany Thiagarajar College 139-140, Kamarajar Salai,	8838114547	kannan_bot@tcarts.in	https://www.linkedin.com/in/d-kannan-82360328/?originalSubdomain=in

			Madurai - 625009, India			
3	Saraswathi Narayanan College, Madurai	Dr. S. Rajendran	Professor Department Of Botany	Department of Botany SN College Perungudi Madurai-22	9443998480	s.rajendrann@yahoo.co.in	https://www.linkedin.com/in/rajendran-suruliyandi-31a18548/?originalSubdomain=in
4	Corporation of Madurai	Dr.V. Sathish Ragavan	Former Chief Health Officer	Arignar Anna Maligai, Thallakulam, Madurai - 625 002.	9841383251	-	-
5	Sakhi Vermicomposting, Vadipatti	Mr. Sivasamy	proprietor	Sakthi Vermicompost Fertlizer NH7, sanampatti, T.Vadipatti, Madurai - 625209.	9994798312	sakthivermi@gmail.com	https://www.linkedin.com/in/sivasamy-p-b9a9188a/?originalSubdomain=in
6	Kalasalingam University	Dr.R.Kannan	Associate Professor	Department of Agriculture KARE Krishnan Kovil Srivilliputtur Tamil nadu	8838773797	kannan@klu.ac.in	https://www.linkedin.com/in/dr-r-kannan-3506771aa/?originalSubdomain=in
7	Tamil Nadu Pollution Control Board	Er. K. Ram Mohan	District Environmental Engineer	Tamil Nadu Pollution Control Board, Thirumangalam	0452 - 2489738	tnpcbmdu@gmail.com	-

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				Taluk, SIDCO Industrial Estate, Kappalur, Madurai- 625008			
8	National Institute of Technology, Trichy	Dr. S.T. Ramesh	Professor	Professor Department of Civil Engineering NIT Trichy Tamil Nadu	9444211585	stramesh@nitt.edu	https://www.linkedin.com/in/ramesh-srikrishnaperumal-49a6705a/?originalSubdomain=in
9	Alter Energy System	Mr. Sivakumar	Proprietor	1-A, New Natham Road, Near Ambedhkar Statue, Madurai, Tamil Nadu 625002	9344118252	siva@alterenergysystem.in	-
10	SCOPE Foundation	Marachi Subburaman	Director	Scope Sustainable ECO HOME - 40, Ramalinga Nagar West Extension, Part II, Woraiyr, Trichy-620 003.	9443167190	scopeagency1986@gmail.com	https://www.linkedin.com/in/subburaman-subburaman-m-b31067a3/?originalSubdomain=in
11	NGO St. Thomas Charitable Trust	Mr. R. Kamalakannan	President	St Thomas Charitable and Educational Trust . Near the old bus stand, Perundurai,	9842472211	sttcet.frm@gmail.com	https://www.linkedin.com/in/kamalakannan-r-7802651b0/?trk=people-guest_people_search-card&originalSubdomain=in

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			Erode - 638052.			
12	Ramraj Associates, Chennai	Mr.G. Bharanidharan	Proprietor	S-2 Thai Srinivas Plot#18 old No.11 New# 6, Srivasa street, Naradhapuri,Chromepet, Chennai-44	9840934338	bharaniji @gmail.com	-
13	King Institute for Agriculture and Research Training Kelara	Mr.R. Manoj Prabakar	Director	Clean Green Development, Madurai	8667098569	manojprabakar94@gmail.com	-
14	Gandhigram Rural Institute Gandhigram	Dr. M. Sivaraman	Former Professor	Former Professor Dept of Physics Gandhigram Rural Institute, Dindugul	9894561142	sivaram_gri@yahoo.com	https://www.linkedin.com/in/murugesan-sivaraman-507426209/?originalSubdomain=in
15	Polymer Consultant	Dr. S. Muralisrinivasan	Polymer Consultant	18, Muthuramalinga Thevar 4th North Cross Street, Meenakshi Nagar, Villapuram, Madurai-625012	944305099	plasconsultant@hotmail.com	https://www.linkedin.com/in/dr-muralisrinivasan-natamai-subramanian-23109b3a/?originalSubdomain=in
16	Greenowill Plastic Waste Management	Mr.Chandran	Proprietor	42, Periyasamy Koil Street, Srivilliputtur –	98949 07447	care@greenowill-com.cdn-	N/A

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					626 125.		sigma.com	
17	Yunus Environment hub, Puducherry	Mr.V.Seenivasan	Proprietor	Zero Plastic Waste, India	9989197193	Seenivasan07@gmail.com	N/A
18	Green Service Trust, Chennai	Mr.Shiva T Krishnamoorthy	Proprietor	78/10, Old State bank colony, West Thambaram, Chennai-45	9444012089	tkrishnamoorthy@gmail.com	N/A
19	En-Gen Eco Care Pvt Ltd	Mr.Sheeban	Executive Director	No.13w/72b,periyar Street Chinnamanur, Chinnamanur Uthamapalayam Theni	9497273364	engenecocare@gmail.com	N/A
20	Maharishi Nursing Home	Dr. D.S. Aravindan	Managing Director	Bye-pass Road, Dharapuram, Tamilnadu	84890-18099		N/A
21	Nadupatti Panchayat Trichy District, Tamilnadu	D. Ponnusamy	Panchayat President	Trichy District, Tamilnadu	8668194470	ppugainpt@gmail.com	N/A
22	Surya Nursing College	Dr. Nagalakshmi (MS)	Correspondent	Vaiyampatti, Trichy-621315	73392-34134	sncnagu@gmail.com	N/A

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23	Sri Guru Hospitals	Dr. Karthik	Managing Director	Manapparai-621306, Trichy District	94885-39639	sriguruhospitalpvtltd@gmail.com	N/A
24	Vaiyampatti Panchayat	Surya v. Subramaniyan	President	Manapparai Taluk, Trichy-621315, Tamilnadu	94434-94415	suryasubramaniyan@gmail.com	N/A
25	Nalam Traders, Manitham Illam	Minu Thangapandian (MS)	Proprietor	Chakkampatty, Trichy-621315, Tamilnadu	99944-13411	nalamtraders2023@gmail.com	N/A
26	Energy Solutions	Navasakthi (ms)	Proprietor	8/51, Chakkampatty, Trichy-621315	94431-10735	nalamneer2017@gmail.com	N/A
27	Eco care Technologies	Mr. J. Bharadwaj CEO , E	CEO	Eco care Technologies,co care Technologies, #22,23 Thyagaraya Road, Shop #02 I st floor, Rainbow Arcade, T. Nagar, Parthasarthi puram, T, Nagar, Chennai- 600017	9884069858	cleancareappliances@gmail.com	N/A
28	Earth Recycler	Mr.Keerthi Sri	Director	Earth Recycler, 58/1, Ground	9440688306	keethi@earthrecycl	N/A

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		Cruz. N		Floor, M.G.R Avenue, Woothucattan Street, Periamedu, Chennai- 600 003		er.com	
29	Marina Labs	Dr. N. K. Udayaprakash	Founder& Chairman	MARINA Labs, Plot no. 14, Kavya Gardens, N.T,Patel Road, Nerkundram, Chennai,Tamil Nadu 600107	9444896061	marinalabs@gmail.com	N/A
30	Vel Tech MultiMedia College	Mr. E. Praveen	Technical Assitant	Vel Tech MultiMedia College, No. 42, Avadi- Vel Tech Road, Poonamallee-Avadi High Road, Vel Nagar, Chennai -62	8667382199	praveenfly22@gmail.com	N/A
31	Prasnath Super Speciality Hospital	Mr. Charan	Director	Prasnath Super Speciality Hospital , 36236A, Velachery Road, Velachery, Chennai-42	9094461253	hicprashanthvelchery@gmail.com	N/A

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| 32 | Dr. Uma Ramachanran | Dr. Uma Ramachanran, Ecology & Environment Expert and Consaltant, Trustee, Center for Action Research on Enviroment science and socity (CARESS) | Ecology & Environment Expert and Consaltant, | 4 SRESHTA 57, subramaniam street, Abiramapuram chennai -600018 | 9840995910 | uma67.ram64@gmail.com | N/A |

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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
2023-24	395	178	If Applied, we can considered		If Applied, we can considered	
2024-25	395	178				
2025-26	395	178				

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
Level-6	2019-20	233	233	233	82	92	92	92	27	1	1	1	1
Level-6	2020-21	31	31	31	14	8	8	8	8	0	0	0	0
Level-6	2021-22	124	124	124	96	60	60	60	45	0	0	0	0

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

. ***Justification:*** *Estimated training is 1 and estimated employment per training is 25 per financial year as proposed.*

Content availability for previous versions of qualifications:
Participant Handbook

Languages in which Content is available: English/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 Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	☒Theory/ Lectures - Imparting theoretical and conceptual knowledge	Not Applicable	Not Applicable
2	☒Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners		
3	☒Showing Practical Demonstrations to the learners		
4	☒Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	☒Tutorials/ Assignments/ Drill/ Practice		
6	☒Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	☒On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training		

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Annexure 3: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory	Practical	Project	Viva
SGJ/N4072: Introduction to Solid Waste	*Introduction to Solid Waste*	25	25	-	-
	PC1. discuss about understanding of challenges associated with generation of waste.	5	-	-	-
	PC2. explain health and environmental impacts of poor waste management.	6	-	-	-
	PC3. discuss elements of a Solid Waste	7	-	-	-
	PC4. explain integrated Solid Waste	7	-	-	-
	PC5. show different types of waste collection through pictures or videos.	-	7	-	-
	PC6. showcase challenges associated with generation of waste.	-	7	-	-

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	PC7. showcase Health and environmental impacts of poor waste management.	-	6	-	-
	PC8. show how to implement integrated solid waste management at site.	-	5	-	-
NOS Total		25	25	-	-

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NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory	Practical	Project	Viva
SGJ/N4073: Identify characteristic, collection , transfer and transport and Separation and processing of solid waste	*Characteristics of Solid Waste*	-	14	-	-
	PC1. depict the sources, types and composition of solid waste.	-	2	-	-
	PC2. identify quantities of solid waste.	-	2	-	-
	PC3. demonstrate properties of solid waste.	-	2	-	-
	PC4. perform data collection on waste.	-	2	-	-
	PC5. understand how different materials, product design, and consumer choices contribute to	-	3	-	-
	PC6. identify strategies for source reduction like minimizing packaging, choosing durable products, and composting food scraps.	-	3	-	-
	Collection, transfer and transport	-	14	-	-
	PC7. show how to develop a solid waste collection system.	-	2	-	-
	PC8. show types of solid waste storage systems and collection vehicles.	-	2	-	-

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	PC9. show design of solid waste collection systems.	-	2	-	-
	PC10. illustrate basic concepts, types and design of solid waste transfer stations.	-	2	-	-
	PC11. perform and understand different collection methods (curbside, centralized, etc.) and select the most effective one for your needs.	-	2	-	-
	PC12. show how to consider waste composition and geography when designing routes and optimizing resource allocation.	-	2	-	-
	PC13. show how to utilize data analysis to track collection performance and identify areas for improvement.	-	2	-	-
	Separation and processing	15	7	-	-

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	PC14. discuss basic concepts of separation and processing of solid waste.	5	-	-	-
	PC15. discuss basic concepts of operation of a Material Recovery Facility.	5	-	-	-
	PC16. explain design of a Material Recovery Facility.	6	-	-	-
	PC17. perform the different stages of waste processing at an MRF, such as sorting, separation, and baling.	-	2	-	-
	PC18. demonstrate the various technologies employed in MRFs, such as conveyor belts, trommels, and optical sorters.	-	2	-	-
	PC19. identify the challenges and opportunities associated with MRF operation, such as contamination and market fluctuations.	-	3	-	-
NOS Total		15	35	-	-

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NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory	Practical	Project	Viva
SGJ/N4074: Perform Composting and recycling, waste to energy and sanitary landfilling	*Composting and recycling*	-	46	-	-
	PC1. show types of solid waste recyclable materials.	-	3	-	-
	PC2. prepare design and implementation of a recycling programme.	-	3	-	-
	PC3. demonstrate basic concepts of solid waste composting.	-	3	-	-
	PC4. show composting technologies and approaches.	-	3	-	-
	PC5. show how to develop a solid waste composting programme.	-	3	-	-
	PC6. perform Bio-gasification of solid waste.	-	2	-	-
	PC7. show how to master the different types of recyclable materials like paper, metal, glass, plastic, and organics.	-	4	-	-

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PC8. show how to learn how to implement an effective recycling program in your home, community, or organization.	-	5	-	-
PC9. ensure understanding the basics principles of composting, the breakdown of organic waste into nutrient-rich soil amendment.	-	5	-	-
PC10. show how to discover various composting methods like bin composting, vermicomposting, and windrow composting.	-	5	-	-
PC11. show how to equip yourself with the knowledge to set up and maintain a successful composting program.	-	5	-	-
PC12. show how to learn about bio-gasification, a technology that converts organic waste into biogas for energy production.	-	5	-	-
Waste to Energy	10	9	-	-
PC13. explain basic concepts and types of solid waste incineration.	5	-	-	-

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PC14. discuss recovering energy from solid waste.	5	-	-	-
PC15. identify different types of incineration: mass burn, refuse-derived fuel, plasma gasification, etc.	-	3	-	-
PC16. perform the basic process of waste burning, ash generation, flue gas treatment, and heat recovery.	-	3	-	-
PC17. show how to weigh the pros and cons: reduced waste volume, energy generation, potential air pollution, and ash management challenges.	-	3	-	-
Sanitary Landfilling	20	15	-	-
PC18. discuss concepts of solid waste landfills.	3	-	-	-
PC19. explain types of landfills and landfill design.	3	-	-	-
PC20. discuss gas movement, control and use in landfills.	4	-	-	-
PC21. explain leachate control and treatment in landfills.	5	-	-	-
PC22. perform operation and closure of landfills	5	-	-	-

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	PC23. demonstrate the basics of landfill technology, including containment, decomposition, and environmental impact.	-	3	-	-
	PC24. show about different landfill types (e.g., sanitary, secure) and design considerations (e.g., liners, leachate collection) for safe and efficient waste disposal.	-	3	-	-
	PC25. demonstrate gas movement and control equipped to manage landfill gas (methane) emissions through techniques like flaring, extraction, and energy production, mitigating climate impact.	-	3	-	-
	PC26. show how to understand how to collect and treat leachate (contaminated liquid) to prevent groundwater pollution and protect ecosystems.	-	3	-	-
	PC27. perform proper landfill operation practices and closure techniques for minimizing environmental hazards and maximizing post- closure land use potential.	-	3	-	-
NOS Total		**30**	**70**	**-**	**-**

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NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory	Practical	Project	Viva
SGJ/N4075: Introduce climate change in context to waste	*Waste and climate change*	**20**	**30**	-	-
	PC1. discuss climate impact of waste.	10	-	-	-
	PC2. explain strategic frameworks for climate change management.	10	-	-	-
	PC3. explore the role of landfills as sources of methane, a potent greenhouse gas, through practical demonstrations or case studies.	-	10	-	-
	PC4. develop practical strategies for promoting waste prevention, reuse, and recycling in communities, businesses, and industries.	-	10	-	-
	PC5. examine the impact of climate change on vulnerable regions, such as coastal areas and low-lying islands, and explore how changes in weather patterns and sea levels can affect waste management infrastructure and practices.	-	10	-	-
NOS Total		**20**	**30**	-	-

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NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory	Practical	Project	Viva
SGJ/N4076: Plan and develop strategy for waste management focusing circular economy and plastic waste management	*Strategy development and planning for Waste Management*	16	20	-	-
	PC1. explain solid waste management planning process.	4	-	-	-
	PC2. discuss financial, institutional, political, social and legal aspects.	4	-	-	-
	PC3. discuss about integrated solid waste management system.	4	-	-	-
	PC4. explain seven-step approach to developing a plan.	4	-	-	-
	PC5. show how to understand the 7-step process, from data collection to implementation.	-	4	-	-
	PC6. show how to consider financial, institutional, political, social, and legal aspects.	-	4	-	-
	PC7. show how to choose the right combination of reduction, reuse, recycling, treatment, and disposal methods.	-	4	-	-

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PC8. show how to analyze data, identify challenges, and choose sustainable solutions.	-	4	-	-
PC9. show how to work with stakeholders to develop and implement the plan.	-	4	-	-
Circular Economy (formerly known as "Towards Zero Waste Society")	-	14	-	-
PC10. demonstrate concepts related to 4R.	-	4	-	-
PC11. demonstrate role of partnerships towards resource efficiency.	-	5	-	-
PC12. show how to greening the waste sector.	-	5	-	-
Plastic waste in solid waste	34	16	-	-
PC13. introduce about polymers.	3	-	-	-
PC14. explain need of plastics in society.	3	-	-	-

	PC15. explain plastic waste.	4	-	-	-
	PC16. discuss about characterisation of plastic waste.	4	-	-	-
	PC17. explain problems related to plastic waste.	4	-	-	-
	PC18. explain guidelines for disposal of plastic waste.	4	-	-	-
	PC19. discuss about plastic waste management.	4	-	-	-
	PC20. explain uses of recycled plastic waste.	4	-	-	-
	PC21. discuss plastic tar road laying.	4	-	-	-
	PC22. show how to reduce or avoid single-use plastics and informed choices on plastic use in daily life.	-	4	-	-
	PC23. show how to properly dispose of plastics for recycling and responsible waste management.	-	4	-	-
	PC24. show how to understand the potential of recycled plastic in applications like road construction.	-	4	-	-
	PC25. show how to promote awareness and responsible plastic use in your community.	-	4	-	-
NOS Total		50	50	-	-

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NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory	Practical	Project	Viva
SGJ/N4077: Perform E-Waste Management	*E-waste - 1*	45	-	-	-
	PC1. introduce E-waste definition	3	-	-	-
	PC2. discuss guidelines for assessment of E-waste market.	4	-	-	-
	PC3. discuss guidelines for selection of methodology for e-waste inventory.	4	-	-	-
	PC4. discuss guidelines for e-waste inventory assessment.	3	-	-	-
	PC5. discuss conceptual approaches and methodology.	3	-	-	-
	PC6. explain any Case study	3	-	-	-
	PC7. define e-waste accurately.	5	-	-	-
	PC8. assess the e-waste market in your region using established guidelines.	5	-	-	-
	PC9. explain how to select the appropriate methodology for conducting an e-waste inventory based on specific needs and context.	5	-	-	-
	PC10. discuss how to implement various e-waste inventory assessment techniques.	5	-	-	-

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PC11. explain how to apply conceptual approaches and methodologies to real-world scenarios through a case study.	5	-	-	-
E-waste - 2	**25**	**30**	-	-
PC12. describe introduction and perspectives of	5	-	-	-
PC13. discuss current practices of E-waste management.	5	-	-	-
PC14. discuss laws, regulations and policies on E-waste.	5	-	-	-

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	PC15. • discuss E-waste management – stages and technologies	5	-	-	-
	PC16. explain any one case study.	5	-	-	-
	PC17. identify e-waste items, their hazardous components, and potential environmental/health impacts.	-	5	-	-
	PC18. perform local e-waste practices on collection/recycling options in your area.	-	5	-	-
	PC19. show how to understand key regulations and producer responsibility policies influencing e- waste management.	-	5	-	-
	PC20. explore different e-waste processing methods (disassembly, recycling, etc.) and their benefits/limitations.	-	5	-	-
	PC21. identify potential funding sources for effective e-waste management initiatives.	-	5	-	-
	PC22. show how to apply learnings to real-world examples, evaluating successes and challenges in implementing best practices.	-	5	-	-
NOS Total		**70**	**30**	**-**	**-**

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NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory	Practical	Project	Viva
SGJ/N4078: Perform Construction and Demolition activities within waste management frameworks, alongside addressing Bio-Medical Waste Management concerns and explores the fundamental principles of Geographic Information Systems applied to waste management practices	*Construction and Demolition Waste Management*	10	11	-	-
	PC1. discuss about construction and demolition waste.	2	-	-	-
	PC2. explain construction and demolition waste rules 2016.	2	-	-	-
	PC3. discuss inventorisation of Construction and demolition waste.	2	-	-	-
	PC4. explain Collection, transport and disposal	2	-	-	-
	PC5. discuss about processing and utilization.	2	-	-	-
	PC6. show how to reduce your C&D waste footprint and contribute to a more sustainable construction industry.	-	2	-	-
	PC7. show how to comply with relevant regulations and avoid potential penalties.	-	3	-	-
	PC8. show how to optimize costs associated with waste management.	-	3	-	-
	PC9. show how to promote resource recovery and circular economy principles in the construction sector.	-	3	-	-

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Bio-Medical Waste Management	22	21	-	-
PC10. explain definition, characteristics and sources of Bio-Medical waste	1	-	-	-
PC11. discuss about risks associated.	1	-	-	-
PC12. discuss legislative, regulatory and policy aspect.	2	-	-	-
PC13. discuss Bio-Medical waste management planning.	2	-	-	-
PC14. discuss waste minimization, reuse and recycling.	2	-	-	-
PC15. discuss about classification, segregation, storage and transport.	2	-	-	-

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	PC16. describe treatment and disposal methods.	2	-	-	-
	PC17. describe collection and disposal of waste water.	2	-	-	-
	PC18. discuss health and safety practices.	2	-	-	-
	PC19. discuss about hospital hygiene and infection control.	2	-	-	-
	PC20. discuss bio-Medical waste management in emergencies.	2	-	-	-
	PC21. discuss issues and challenges.	2	-	-	-
	PC22. minimize risks: Safely handle, classify, segregate, store, transport, and dispose of bio-medical waste to prevent infections, environmental harm, and occupational hazards.	-	3	-	-
	PC23. show how to implement waste management plans within legal and policy frameworks, ensuring responsible and sustainable practices.	-	3	-	-
	PC24. show how to employ techniques like segregation and waste minimization to decrease the amount of bio-medical waste generated.	-	3	-	-

PC25. show how to choose appropriate treatment and disposal methods based on waste type and risk, considering environmental impact and cost-effectiveness.	-	3	-	-
PC26. show how to implement proper hygiene and infection control measures to safeguard healthcare workers and the community from	-	3	-	-
PC27. show how to adapt waste management practices during crises and disasters to maintain safety and sanitation.	-	3	-	-
PC28. show how to address potential issues like resource constraints, lack of awareness, and inadequate infrastructure.	-	3	-	-
GIS	**18**	**18**	-	-
PC29. introduce GIS	2	-	-	-
PC30. explain GIS Software's.	2	-	-	-
PC31. discuss fundamental of GIS.	2	-	-	-
PC32. describe layers.	2	-	-	-
PC33. discuss spatial Data and GIS.	2	-	-	-
PC34. discuss survey methods.	2	-	-	-
PC35. explain fundamental of maps.	2	-	-	-

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	PC36. discuss resource mapping exercises.	2	-	-	-
	PC37. explain use of GIS and GPS tools and applications for data collection and mapping.	2	-	-	-
	PC38. operate popular GIS software like ArcGIS or QGIS to create and manage geographic information.	-	3	-	-
	PC39. show how to understand the core principles of GIS layers, spatial data, projections, and coordinate systems.	-	3	-	-
	PC40. show how to collect accurate spatial data using various survey methods and GPS technology.	-	3	-	-
	PC41. show how to interpret and analyze maps effectively, extracting valuable insights from geographic patterns.	-	3	-	-
	PC42. show how to conduct resource mapping exercises to identify, measure, and monitor natural resources like water, forests, or minerals.	-	3	-	-
	PC43. apply GIS and GPS tools in real-world scenarios for data collection, mapping, and resource management.	-	3	-	-
NOS Total		50	50	-	-

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NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory	Practical	Project	Viva
DGT/VSQ/N0103: Employability Skills (90 Hours)	*Introduction to Employability Skills*	1	1	-	-
	PC1. understand the significance of employability skills in meeting the current job market requirement and future of work	-	-	-	-
	PC2. identify and explore learning and employability relevant portals	-	-	-	-
	PC3. research about the different industries, job market trends, latest skills required and the available opportunities	-	-	-	-
	Constitutional values – Citizenship	1	1	-	-
	PC4. 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.	-	-	-	-
	PC5. follow environmentally sustainable practices	-	-	-	-
	Becoming a Professional in the 21st Century	1	3	-	-

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PC6. recognize the significance of 21st Century	-	-	-	-
PC7. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
PC8. adopt a continuous learning mindset for personal and professional development	-	-	-	-
Basic English Skills	3	4	-	-
PC9. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-

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	PC10. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
	PC11. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
	Career Development & Goal Setting	**1**	**2**	-	-
	PC12. identify career goals based on the skills, interests, knowledge, and personal attributes	-	-	-	-
	PC13. prepare a career development plan with short- and long-term goals	-	-	-	-
	Communication Skills	**2**	**2**	-	-
	PC14. follow verbal and non-verbal communication etiquette while communicating in professional and public settings	-	-	-	-
	PC15. use active listening techniques for effective communication	-	-	-	-
	PC16. communicate in writing using appropriate style and format based on formal or informal requirements	-	-	-	-
	PC17. work collaboratively with others in a team	-	-	-	-
	Diversity & Inclusion	**1**	**1**	-	-

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	PC18. communicate and behave appropriately with all genders and PwD	-	-	-	-
	PC19. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
	Financial and Legal Literacy	**2**	**3**	-	-
	PC20. identify and select reliable institutions for various financial products and services such as bank account, debit and credit cards, loans, insurance etc.	-	-	-	-
	PC21. carry out offline and online financial transactions, safely and securely, using various methods and check the entries in the passbook	-	-	-	-
	PC22. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
	PC23. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
	Essential Digital Skills	**3**	**5**	-	-
	PC24. operate digital devices and use their features and applications securely and safely	-	-	-	-
	PC25. carry out basic internet operations by connecting to the internet safely and securely, using the mobile data or other available networks through Bluetooth, Wi-Fi, etc.	-	-	-	-

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PC26. display responsible online behaviour while using various social media platforms	-	-	-	-
PC27. create a personal email account, send and process received messages as per requirement	-	-	-	-
PC28. carry out basic procedures in documents, spreadsheets and presentations using respective and appropriate applications	-	-	-	-
PC29. utilize virtual collaboration tools to work effectively	-	-	-	-
Entrepreneurship	2	3	-	-
PC30. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC31. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC32. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
Customer Service	1	2	-	-
PC33. identify different types of customers and ways to communicate with them	-	-	-	-

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	PC34. identify and respond to customer requests and needs in a professional manner	-	-	-	-
	PC35. use appropriate tools to collect customer feedback	-	-	-	-
	PC36. follow appropriate hygiene and grooming standards	-	-	-	-
	Getting ready for apprenticeship & Jobs	2	3	-	-
	PC37. create a professional Curriculum vitae	-	-	-	-
	PC38. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
	PC39. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
	PC40. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
	PC41. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total		**20**	**30**	**-**	**-**

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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:

    - Batches assigned to the assessment agencies for conducting the assessment on SDSM/SID or email
    - Assessment agencies send the assessment confirmation to VTP/TC looping SCGJ
    - Assessment agency deploys the ToA certified Assessor for executing the assessment
    - SCGJ monitors the assessment process & records

2. Testing Environment:

    - Confirm that the centre is available at the same address as mentioned on SDMS or SID
    - Check the duration of the training.
    - Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
    - Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
    - Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
    - Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
    - Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:

    - Question papers created by the Subject Matter Experts (SME)
    - Question papers created by the SME verified by the other subject Matter Experts
    - Questions are mapped with NOS and PC
    - Question papers are prepared considering that level 1 to 3 are for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
    - Assessor must be ToA certified & trainer must be ToT Certified
    - Assessment agency must follow the assessment guidelines to conduct the assessment

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4. Types of evidence or evidence-gathering protocol:
    - Time-stamped & geotagged reporting of the assessor from assessment location
    - Center photographs with signboards and scheme specific branding
    - Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
    - Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos

5. Method of verification or validation:
    - Surprise visit to the assessment location
    - Random audit of the batch
    - Random audit of any candidate

6. Method for assessment documentation, archiving, and access
    - Hard copies of the documents are stored
    - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
    - Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

On the Job:

OJT Monitoring Report
- As in Green Jobs Sector, reproducing the evidence for assessment is not feasible due to constraints like cost, confidentiality and controlled environment, every
- Apprentice is required to record the evidences performed during the OJT and the same gets authorized by his/her supervisor.
- The evidence recording is done in a structured monitoring report, termed as OJT Monitoring report.
- During the OJT, every trainee is required to fill the OJT monitoring report which is required to be signed by his/her supervisor.
- Towards the end of OJT period these reports are submitted with the HR department of company
- These duly submitted reports are then verified by an Industry nominated assessor for verification of evidence.

Theory, Practical & Viva:
- Scope – Is used to test the knowledge and understanding and skills acquired during the OJT as well as to conform the OJT monitoring report.
- Some personality traits and generic skills (such as – promptness, sharpness, communication skills, depth of knowledge, comprehension, presentation, patience
- etc) can also be tested, which is also required for the QP.
- Tools – The assessment's questions should be aligned with the Qualification Pack, covering the PCs. There will be summative assessment at the end of the OJT.
- Method – Direct questions open and close ended questions, situation-based questions, analytical questions, and decision-making based questions for Viva,
- MCQ for the theory and performing QP related operations for practical. Different questions in theory, practical and viva are included to test relevant PCs

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from
- the QP
- Analysis – Assessor draws a spectrum of ready answers to be expected from trainee for Viva. This reduces effect of subjectivity of the assessor. Comparative
- Quality of trainees within a batch or different institutes can be gauged. The skill is gauged by observing the practical work.

Execution of OJT Assessment:
- HR department hands over the individual OJT monitoring report with Industry nominated assessor and schedules an assessment meeting for each trainee.
- Industry nominated assessor assesses each trainee based on OJT monitoring report, viva on each PC and also takes into account attendance of each trainee towards the end of the OJT period.
- The OJT marks are compiled for each NOS by the Industry nominated assessor and submitted with HR department of company.
- The OJT assessment results are then sent to SCGJ by HR department of company in a sealed envelope for compiling the assessment results in case of offline assessment.

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Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf

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Annexure: Annexure: Career Progression and OM

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