QUALIFICATION FILE – Micro Credentials

Biomedical Waste Management

Nursing and Paramedical Staff

☒ **Public** ☐ **Private**

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

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

NCrF/NSQF Level: 4.5

Submitted By:

Skill Council for Green Jobs
Chief Executive Officer
CBIP Building, Malcha Marg,
Chanakyapuri, New Delhi – 110021
Contact no. and mail: 9871119101, ceogreenjobs@gmail.com

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Section 1: Basic Details

1.	**Micro Credential-Qualification Name**	**Biomedical Waste Management Nursing and Paramedical Staff**	
2.	**Sector/s**	**Environmental Science**	
3.	**National Qualification Register (NQR) Code & Version** *(Will be issued after NSQC approval.)*	NM-4.5-ES-02106-2024-V1-SCGJ	*4.* **NCrF/NSQF Level: 4.5**
5.	**Brief Description of the Micro Credential**	This qualification is designed to play a crucial role in biomedical waste management by ensuring the safe handling, segregation, transportation, and disposal of waste in compliance with regulations. Their commitment to these practices is essential for maintaining a safe and healthy healthcare environment. The purpose of this qualification in biomedical waste management for nurses is essential for safeguarding patient and staff health, complying with regulations, protecting the environment, and ensuring the efficient and responsible management of biomedical waste in healthcare settings. It enhances overall healthcare quality and safety.	
6.	**Eligibility Criteria for Entry for Students/Trainee/Learner/Employee**	a. **Entry Qualification & Relevant Experience**	

a. Entry Qualification & Relevant Experience

S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)
1	Completed 1st year of 3-year/4-year UG(Nursing/Paramedical/BSc (Science))	NA
2	Pursuing 1st year of 3-year/4-year UG ((Nursing/Paramedical/BSc (Science)) and continuous education	NA
3	Completed 1st year of 2-year diploma (Medical Laboratory Technology/Nursing) (after 12th)	NA
4	Pursuing 2nd year of 2-year diploma (Medical Laboratory Technology/Nursing) after 12th and continuing education	NA
5.	12th Grade Pass	1 year of relevant experience
6.	Previous relevant Qualification of NSQF Level 4	1.5 years of Relevant experience

		7.	Previous relevant Qualification of NSQF Level 3.5	3 years of Relevant experience

b. **Age: 18 years**

7.	**Credits Assigned to this Qualification, Subject to Assessment** *(as per National Credit Framework (NCrF))*	1	**8. Common Cost Norm Category (I/II/III)** *(wherever applicable)*: **III**
9.	**Any Licensing Requirements/ Pre-requisites for Undertaking Training** *(wherever applicable)*	Not Applicable	
10.	**Expected Outcomes of the Micro Credential**	**Terminal learning outcomes are:** • Discuss about the Biomedical waste. • Discuss about classification of Biomedical waste. • Understand about Segregation and Collection of Biomedical Waste. • Discuss about storage and transportation of biomedical waste. • Discuss about Treatment and disposal of biomedical waste. • Discuss about Health and Safety precautions to be taken while handling biomedical waste. • Understanding Best Practices in biomedical waste Management.	

11.	**Training Duration by Modes of Training Delivery** *(Specify **Total Duration** as per selected training delivery modes and as per requirement of the qualification)*	☐ **Offline Only** ☐ **Online Only** ☒ **Blended**

Training Delivery Mode	Theory (Hours)	Practical (Hours)	Total (Hours)
Classroom (offline)	20:00	10:00	30:00
Online			

(Refer Blended Learning Annexure for Details)

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12.	Assessment Criteria							
		Theory (Marks)	Practical (Marks)	Project (Marks)	Viva (Marks)	Total (Marks)	Passing %age	
		70	80			150	70	

13.	Is the Qualification Amenable to Persons with Disability	☒ Yes ☐ No If *"Yes", specify applicable type of Disability:* ☒ **Acid Attack ☒ Dwarfism Victims**
14.	How participation of women will be encouraged?	The programme would be proposed to be incorporated in nursing colleges to train women candidates.
15.	Other Indian Languages in which the Micro Credential will be implemented.	**Not Applicable**
16.	Is similar Micro Credential Qualification(s) available on NQR-if yes, justification for this qualification	☐ Yes ☒ No URLs of similar Qualifications:
17.	Name and Contact Details Submitting / Awarding Body SPOC	**Name:** Dr. Praveen Saxena **Email:** ceogreenjobs@gmail.com **Contact No.:** 9871119101 **Website:** https://sscgj.in/

18. NSQC Approval Date: 31.01.2024	19. Validity Duration: 3 Years	20. Next Review Date: 30.01.2027

Section 2: Training Related

1.	**Trainer's Qualification and experience in relevant sector (in years)** *(as per requirement and NCVET guidelines)*	Post Graduate in Science Or Completed 4 year of UG (Preferably nursing/MBBS with 2 years of relevant experience Or

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		Training Experience: Certified under relevant Craft Instructor Training Scheme (CITS) course
2.	**Master Trainer's Qualification and experience in relevant sector (in years)** *(as per requirement and NCVET guidelines)*	Post Graduate in Science Or Completed 4 year of UG(Preferably nursing/MBBS with 5 years of relevant experience Or Trainer on 'Biomedical Waste Management' with 5 years of training experience
3.	**Tools and Equipment Required for Training**	☒ **Yes** ☐ **No** *(If "Yes", details to be provided in Annexure)*

Section 3: Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** *(as per requirement and NCVET guidelines)*	Post Graduate in Science Or Completed 4 year of UG(Preferably nursing/MBBS) with 3 years of relevant experience
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per requirement and NCVET guidelines)*	Post Graduate in Science Or Completed 4 year of UG(Preferably nursing/MBBS with 3 years of relevant experience
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per requirement and NCVET guidelines)*	Post Graduate in Science Or Completed 4 year of UG(Preferably nursing/MBBS with 10 years of relevant experience
4.	**Assessment Mode** *(Specify the assessment mode)*	**Mode:** ☒ **Online Only** ☒ **Offline Only** ☐ **Blended**
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)*

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Section 4: Evidence of Need of the Micro Credential

As per the NCVET Guidelines for evidence of need, provide the required Annexure/Supporting documents.

1.	Government /Industry initiatives/ requirement (Yes/No): Yes, Government of India, Ministry of Environment, Forest and Climate Change (MOEFCC)
	is the nodal agency for the India's environmental and forestry policies and programmes. Govt. of India, signed the Stockholm Convention on POPs in 2001 and ratified it in 2006. Post ratification of the Convention, as per Article T of the convention, National Implementation Plan (NlP) was formulated which identified " Environmentally Sound Management of Medical Wastes" as one of the priority areas. Waste management rules in India are founded on the principles of "sustainable development", "precaution" and "polluter pays". Various rules were framed under the broader umbrella of "Environment Protection Act' by Ministry of Environment, Forest and Climate Change (MoEF&CC) in 1986. Under the Environment (Protection) Act, 1986, Biomedical waste Management Rules, 2016 came into force from 28th March 2016 in superseding of the earlier Biomedical Waste (Management and Handling) Rules, 1998. Amendments to BMWM Rules 2016 was notified via Gazette notification on 16th March 2018 as Biomedical Waste Management (Amendments) Rules, 2018.
2.	Number of Industry validation provided: *5, Annexure: Industry Validations Summary (Copy attached)*
3.	Estimated number of people to be trained: Annexure:
	The target audience are nursing/paramedical staff of the healthcare system. They will upskill on correct methodology of segregation, collection and storage of biomedical waste as per BMW Management rule 2016(Amended in 2021). There is large numbers of trainings can be taken up

Section 5: Annexure Check List

Specify Annexure Number and Name.

1.	**Annexure:** NCrF/NSQF level justification based on NCrF Level/NSQF descriptors *(Mandatory)*	Annexure: Evidence of Level

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2.	**Annexure:** Learning Outcomes and Assessment Criteria *(Mandatory)*	Annexure: Learning Outcomes and Assessment Criteria
3.	**Annexure:** Assessment Strategy *(Mandatory)*	*Annexure: Assessment Strategy*
4.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory – Except in case of online course)*	*Annexure: Tools and Equipment (Lab Set-Up)*
5.	**Annexure:** Blended Learning *(Mandatory in case selected mode of delivery is "Blended Learning")*	*Not Applicable*
6.	**Annexure:** Acronym and Glossary *(Optional)*	*Annexure: Acronym and Glossary*

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	Biomedical waste Management professionals in biomedical waste management must possess a solid foundation of theoretical knowledge encompassing waste categories, regulations, treatment technologies, safety protocols, environmental considerations, and documentation practices to effectively manage biomedical waste in healthcare facilities.	Biomedical waste management is crucial for maintaining health and safety standards in healthcare facilities. Professionals in this field must have a comprehensive understanding of various aspects related to waste management, including waste categories, regulations, treatment technologies, safety protocols, environmental concerns, and documentation practices. This knowledge enables them to effectively manage biomedical waste, ensuring	4.5

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		compliance with regulations, minimizing environmental impact, and mitigating risks to public health. By possessing a solid theoretical foundation, biomedical waste management professionals can implement efficient and safe waste management practices in healthcare settings, ultimately contributing to the overall well-being of patients, healthcare workers, and the community. He/she should have knowledge for Biomedical waste Management, Waste Management as well Since all the above-mentioned areas are related to basic factual knowledge in Biomedical waste Management, the role qualifies for Level 4.5.	
Professional and Technical Skills/ Expertise/ Professional Knowledge	The individual is expected to have Knowledge of infection control principles and practices to prevent the spread of pathogens, Ability to classify and segregate biomedical waste according to risk categories, Proficiency in safely handling biomedical waste, including proper lifting and carrying techniques, Familiarity with equipment used in waste management, such as autoclaves and incinerators, Effective communication with healthcare staff and waste management personnel. He should be able to apply	Biomedical waste management professional is expected to develop professional skills, must have excellent communication skills and Knowledge of infection control principles, Ability to classify and segregate waste, Proficiency in safe handling techniques, applying principles of professional practice ensures adherence to ethical standards, regulatory requirements, and best practices in biomedical waste management, thereby maintaining a high standard of care and safety in healthcare facilities.	4.5

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	principles of professional practice at the workplace.	Since all the above-mentioned professional skill are related to biological waste management to handle all the operations. So, the role qualifies for Level 4.5.	
Employment Readiness & Entrepreneurship **Skills & Mind-set/Professional Skill**	Biomedical waste management is a critical aspect of healthcare operations, ensuring the safe handling, disposal, and treatment of waste generated in healthcare facilities. In the context of employment readiness and entrepreneurship skills and mindset, several key requirements are essential: Professionals and entrepreneurs in the biomedical waste management field must have a thorough understanding of the regulatory frameworks governing waste management at local, national, and international levels, Professionals should be able to identify and segregate waste according to its type, ensuring appropriate treatment and disposal methods are employed, Professionals should be trained in techniques for safely packaging, labeling, and transporting waste to treatment facilities, Professionals should possess strong problem-solving skills and the ability to make informed decisions under pressure, For entrepreneurs in the biomedical waste management sector, business skills such as strategic planning, financial management,	It should be focusing on a combination of technical knowledge, regulatory compliance, practical skills, problem-solving abilities, and entrepreneurial skills is essential for professionals and entrepreneurs in biomedical waste management to contribute to safe and efficient waste management practices in healthcare. Hence, the role can be placed at Level 4.5. The Biomedical Waste Management Personnel is expected to address Biomedical waste impacts and minimize the risk through various mitigation and adaptation strategies. Since all the above-mentioned professional skill are related to demonstrating practical skills, the role qualifies for Level 4.5	4.5

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	marketing, and customer service are essential for establishing and growing a successful enterprise. Further, the job holder must be able to take the day-to-day decisions and solve problems.		
Broad Learning Outcomes/Core Skill	The Biomedical waste Management Personnel is expected to have good practical knowledge of safe handling, collection, treatment, and disposal of potentially hazardous waste generated in healthcare facilities.	The Biomedical waste Management Personnel is expected to exhibit basic knowledge of Effective utilization of tools and equipment is critical for efficiently managing biomedical waste. Personnel need practical knowledge of how to use tools such as waste containers, sharps containers, and specialized waste handling equipment to safely collect, transport, and store biomedical waste. Maximizing the utilization of these tools ensures proper containment and prevents spills or leaks that could pose environmental or health risks. He should communicate effectively with employees, vendors and clients to develop a long-term relationship for achieving business goals. Hence, the job holder can be placed at Level 4.5	4.5
Responsibility	The responsibility of biomedical waste management nursing and paramedical staff is to ensure the safe handling, collection, treatment, and disposal of potentially	The Biomedical waste Management Personnel is responsible for all activities to manage biomedical waste as per standard protocol and under	4.5

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	hazardous waste generated in healthcare facilities. This includes: Segregating different types of biomedical waste according to their risk category, Practicing infection control measures to prevent the spread of pathogens, Safely handling biomedical waste, including sharps and hazardous materials, Operating and maintaining equipment used in waste treatment and disposal, Maintaining accurate documentation of waste management activities, Communicating effectively with healthcare staff and waste management personnel, Responding to emergencies involving spills or incidents with biomedical waste, Adhering to ethical standards and regulatory requirements in waste management practices. S/he is also expected to update self with the Biomedical waste Management guidelines 2016.	guidance of administration of hospital. Thus s/he can be placed at level 4.5	

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Annexure: Learning Outcomes and Assessment Criteria

Detailed learning outcomes and assessment criteria for the qualification are as follows:

S. No.	Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
1.	Module 1: Introduction to Biomedical Waste Management	10			
2.	Module 2: Classification of Biomedical Waste	10	10		
3.	Module 3: Segregation and Collection of Biomedical Waste	10	30		
4.	Module 4: Storage and Transportation of Biomedical Waste	10	30		
5.	Module 5: Treatment and Disposal of Biomedical Waste	10			
6.	Module 6: Health and Safety in Biomedical Waste Management	10	10		
7.	Module 7: Best Practices in Biomedical Waste Management	10			
Total Marks		**70**	**80**		

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:

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- 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 MCr
- 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

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

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- 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

Annexure: Tools and Equipment

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Different colour coded bins used in biomedical waste disposal	Standard make	4
2	Personnel Protective Equipment	Standard make	30
3	CPCB guideline copy for biomedical waste management	unit	30
4	Demonstration video	MP4/Any AV supportive format	2
5	Photographs of biomedical waste for activity	A4 sheet	15

Classroom Aids:

The aids required to conduct sessions in the classroom are:

1. Marker
2. chart and visual aid.
3. Projector
4. Laptop

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Annexure: Industry Validations Summary

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1	Sir Ganga Ram Hospital	Dr. Anupam Sachdeva	Head, Institute of Child Health	ICH, Sir Ganga Ram Hospital, Rajinder Nagar, Delhi	9811043476	anupamace@yahoo.co.in	
2	Fortis Memorial Research Institute	Dr. Rahul Prashad	Medical Superintendent	Fortis Memorial Research Institute, Sector 44, Gurugram	9560912424	rahul.prashad@fortishealthcare.com	
3	Sehgal Neo Hospital	Jasleen Kaur	GM	Paschim Vihar, Delhi	9871093713	Gm.marketing@sehgalneo.co.in	
4	Shivam Hospital	B.S. Pathanih	Admin Officer	Sector 30, Gurugram	9213988804	info@shivamhealthcare.in	
5	Mittal Hospital	Dr. S.C.Mittal	Director	Alwar	9414016280	Mittalhospital_alw@yahoo.com	

Annexure: Training Details

Training Projections:

Year	Estimated Training # of Total Candidates	Estimated training # of Women	Estimated training # of People with Disability
2024-25	250	50	10
2025-26	250	50	10
2026-27	500	100	20

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Data to be provided year-wise for next 3 years.

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		

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

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NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
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 based on their main economic function, product, service or technology.

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