Gyanmanjari Innovative University

Course Syllabus

Gyanmanjari Institute of Medical Science and Healthcare
Semester-1

Subject: Environmental Sanitation, Waste Management& Biomedical Waste Management- PGDSI11502

Type of course: Major

Prerequisite: Basic understanding of biology, health, hygiene and public health.

Rationale: This subject develops practical understanding of environmental sanitation, community waste management and biomedical waste management. It prepares Sanitary Inspector students to promote hygienic environments, safe waste handling, infection prevention, occupational safety and community health.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
CI	T	P	C	Theory Evaluation		Practical Marks			
				ESE	MSE	V	P	ALA	
4	0	0	4	60	30	10	00	50	150

Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	**Sanitary Survey Activity** Students assess a selected area for water, drainage, housing and sanitation conditions, prepare a short report, and upload it on the GMIU web portal.	10
2	**Waste Segregation Demonstration** Students classify common household and biomedical waste into appropriate categories with colour coding, and upload it on the GMIU web portal.	10
3	**Biomedical Waste Case Study** Students identify hazards, propose safe handling and disposal measures for the given case, and upload it on the GMIU web portal.	10
4	**Community Sanitation Mapping** Students prepare a simple map showing sanitation facilities, waste collection points and risk areas, and upload it on the GMIU web portal.	10
5	**Awareness Campaign** Students develop posters/messages promoting sanitation, waste segregation and environmental health, and upload it on the GMIU web portal.	10
	Total	**50**

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Course Content:

Unit No.	Course content	Hrs	% Weightage
1	**Environmental Sanitation** • Concept, scope and importance of environmental sanitation • Safe water supply and protection of water sources • Water purification and disinfection • Sanitary survey of water sources • Air, housing, ventilation, lighting and noise sanitation • Food sanitation and personal hygiene	15	25%
2	**Waste Management** • Types and sources of solid waste • Waste segregation, collection, storage and transportation • Methods of treatment and disposal of solid waste • Composting, recycling and resource recovery • Liquid waste, sewage and sullage management • Drainage and sanitation systems • Role of sanitary inspector in community waste management	15	25%
3	**Biomedical Waste Management** • Definition, sources and categories of biomedical waste • Segregation, colour coding and labeling • Collection, storage and transportation • Treatment and disposal methods • Sharps and infectious waste management • Occupational health, PPE and infection prevention • Spill management and accident reporting • Legal and regulatory framework for biomedical waste management	15	25%
4	**Environmental Health and Community Safety** • Environmental pollution and public health effects • Vector breeding associated with poor sanitation • Disaster and emergency waste management • Community participation and sanitation awareness • Inspection, monitoring, documentation and reporting • Sanitary inspector's responsibilities in environmental health	15	25%

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks **(Revised Bloom's Taxonomy)**						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	20%	20%	20%	10%	10%	20%

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course, the students should be able to:	
CO1	Explain the principles and components of environmental sanitation and their importance in preventing disease.
CO2	Apply appropriate methods for segregation, collection, treatment and disposal of community waste.
CO3	Describe biomedical waste categories, safe handling, treatment, disposal and occupational safety practices.
CO4	Conduct basic sanitation-oriented inspection and promote environmentally safe practices in the community.

Instructional Method:

The course may be delivered through lectures, demonstrations, case studies, group discussions, role play, quizzes, brainstorming, field-oriented activities and audiovisual resources. Students may use supplementary e-learning and government/public-health resources.

Internal evaluation may be based on active learning assignments, presentations, quizzes and case studies.

Reference Books:

1. Park, K. (2023). *Park's textbook of preventive and social medicine*. Banarsidas Bhanot.
2. Central Public Health and Environmental Engineering Organisation. (2016). *Manual on municipal solid waste management*. Ministry of Urban Development, Government of India.
3. Central Pollution Control Board. (2016). *Guidelines for management of biomedical waste*. Ministry of Environment, Forest and Climate Change, Government of India.
4. Ministry of Environment, Forest and Climate Change. (2016). *Bio-medical waste management rules, 2016*. Government of India.
5. World Health Organization. (2024). *Health-care waste*. World Health Organization.
6. World Health Organization. (2024). *Universal water, sanitation, hygiene, waste and electricity services in all health care facilities to achieve quality care: Global framework for action 2024–2030*. World Health Organization