GANPAT UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

Programme	Master of Technology	Branch/Spec.	Biomedical Engineering
Semester	I	Version	1.0.0.0
Effective from Academic Year	2018-19	Effective for the batch Admitted in	August 2018
Subject code	3BM103	Subject Name	Biomedical Waste Management (Elective-I)

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	-	0	-	3	Theory	40	60	100
Hours	3	-	0	-	3	Practical	-	-	-

Pre-requisites: Basic knowledge of Human Biology, Hospital management & Clinical Engineering.

Learning Outcome: The educational objectives of the course are to educate students to attain the following:

- Students can describe the types of wastes produced in oral healthcare settings.
- Identify appropriate personal protective equipment to handle regulated medical waste.
- Segregate regulated medical waste into non-infectious and infectious categories.
- Collect each category of wastes in the proper container.
- Prepare infectious waste containers for proper disposal.
- Clean up safely after an accidental spill of regulated medical waste.

Theory syllabus

Unit	Content	Hrs
	Introduction to the overview and importance of the course.	
1	**INTRODUCTION:** Definition and description of Medical Waste, Classification of hazardous medical waste, Characterization of health-care waste, Approach to overall management of healthcare waste.	**5**
2	**MEDICAL WASTE RISKS AND IMPACT ON HEALTH AND THE ENVIRONMENT:** Overview of Hazards, Public sensitivity, Public Health impact	**6**
3	Legislative, Regulatory and Policy aspects of Health-care waste	**5**
4	**FUNDAMENTAL PRINCIPLES OF A WASTE MANAGEMENT PROGRAMME:** Responsibilities & duties of hospital project manager, Water and habitat engineer, local waste manager, Hospital administrator, head nurse, chief pharmacist, head of laboratory, Preparing the waste management plan, Estimating costs, Implementing the waste management plan.	**8**
5	**RECYCLING PROCESS:** Waste minimization, Recycling symbols for plastics, Safe reuse, Recycling and recovery, Environmental management systems, Minimum approach to waste minimization	**6**
6	**SORTING, RECEPTACLES AND HANDLING:** Sorting principles, Handling of bags,	**5**
7	**Collection, Storage & Transport System**: Various methods, Precautions during collection, Storage & Transportation of Hospital Waste.	**4**
8	**TREATMENT AND DISPOSAL:** Treatment and disposal methods, Incineration, Chemical disinfection, Needle extraction or destruction, Encapsulation.	**3**
9	**STAFF PROTECTION MEASURES:** Personal protective equipment, Personal hygiene, Emergency measures, Training.	**3**

References:

1	Kaiser B, Eagan PD, Shaner H (2001). Solutions to health care waste: life-cycle thinking and "green" purchasing. Environmental Health Perspectives, 109(3):205–207.
2	MSF. Technical Brief 6.08: Organic waste pit ("placenta" pit). Geneva, Médecins Sans Frontières.
3	Medical Waste Management: International Committee of the Red Cross 19, avenue de la Paix 1202 Geneva, Switzerland T +41 22 734 60 01 F +41 22 733 20 57 E-mail: shop@icrc.org www.icrc.org © ICRC, November 2011
4	Hassan MM et al. (2008). Pattern of medical waste management: existing scenario in Dhaka City, Bangladesh. BMC Public Health, 8:36–45.

Note:

Version 1.0.0.0 (First Digit= New syllabus/Revision in Full Syllabus, Second Digit=Revision in Teaching Scheme,Third Digit=Revision in Exam Scheme, Forth Digit= Content Revision)
L=Lecture, TU=Tutorial, P= Practical/Lab., TW= Term work, DT= Direct Teaching, Lab.= Laboratory work
CE= Continuous Evaluation, SEE= Semester End Examination