

SUMANDEEP VIDYAPEETH

(Declared as Deemed to be University under Section 3 of the UGC Act 1956)

Accredited by NAAC with a CGPA of 3.53 out of four-point scale at 'A' Grade

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Attested CTC

Charaney
15/2/2021

Vice-Chancellor

Sumandeep Vidyapeeth

An Institution Deemed to be University

Vill. Piparia, Taluka: Waghodia.

Dist. Vadodara-391 760. (Gujarat)

CURRICULUM

Diploma in BIOMEDICAL WASTE MANAGEMENT



Mandhankar,

2016

Govind



INTRODUCTION

Scope

The quality of paramedical care has improved tremendously in the last few decades due to the advances in technology, thus creating fresh challenges in the field of healthcare. It is now widely recognized that health service delivery is a team effort involving both clinicians and non-clinicians, and is not the sole duty of physicians and nurses. Professionals that can competently handle sophisticated machinery and advanced protocols are now in high demand. In fact, diagnosis is now so dependent on technology, that paramedical and healthcare professionals are vital to successful treatment delivery.

Effective delivery of healthcare services depends largely on the nature of education, training and appropriate orientation towards community health of all categories of health personnel, and their capacity to function as an integrated team, with a range of skills and expertise, play key roles within the National Health Service, working autonomously, in multi-professional teams in various settings. All of them are first-contact practitioners and work across a wide range of locations and sectors within acute, primary and community care.

Learning goals and objectives for paramedical healthcare professionals

The learning goals and objectives of the undergraduate and graduate education program will be based on the performance expectations. They will be articulated as learning goals (why we teach this) and learning objectives (what the students will learn). Using the framework, students will learn to integrate their knowledge, skills and abilities in a hands-on manner in a professional healthcare setting.

Program outcomes

- To ensure operating room environment is safe and the operative procedure is conducted under conditions that maximize patient safety.
- To prepare professionals to be expert in theory and application of the principles of asepsis and sterile techniques.
- To combine knowledge of human anatomy, surgical procedures and implementation of tools to facilitate a physician's performance of diagnostic procedures.

Ethics and accountability

Students will understand core concepts of clinical ethics and law so that they may apply these to their practice as healthcare service providers. Program objectives should enable the students

- Describe and apply the basic concepts of clinical ethics to actual cases and situations

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- Recognize the need to make health care resources available to patients fairly, equitably and without bias, discrimination or undue influence
- Demonstrate an understanding and application of basic legal concepts to the practice □
Employ professional accountability for the initiation, maintenance and termination of patient-provider relationships
- Demonstrate respect for each patient's individual rights of autonomy, privacy, and confidentiality.

Commitment to professional excellence

The student will execute professionalism to reflect in his/her thought and action a range of attributes and characteristics that include technical competence, appearance, image, confidence level, empathy, compassion, understanding, patience, manners, verbal and non-verbal communication, an anti-discriminatory and non-judgmental attitude, and appropriate physical contact to ensure safe, effective and expected delivery of healthcare.

Eligibility criteria: The candidates should have passed 10+2 from a recognized board.

Duration of the course

Duration of the course is 2 year and 1 year internship

Medium of instruction:

English shall be the medium of instruction for all the subjects of study and for examination of the course.

Attendance

A candidate has to secure minimum 80% attendance in overall with at least-

1. 75% attendance in theoretical
2. 80% in Skills training (practical) for qualifying to appear for the final examination.

No relaxation, whatsoever, will be permissible to this rule under any ground including indisposition etc.

Assessment:

Assessments should be completed by the academic staff, based on the compilation of the student's theoretical & clinical performance throughout the training programme. To achieve this, all assessment forms and feedback should be included and evaluated. Student must attain at least 50% marks in each Theory, Internal assessment and Practical independently / separately for each individual subject

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COURSE OF INSTRUCTION

Course Name	Course Code	Theory (In hrs.) (Class and lab)	Practical (In hrs.) (Clinical)
First Year - Total Hours 300			
Liquid waste Management	DBMWM101	240	60
Second Year - Total Hours 400			
Solid Waste Management	DBMWM201	160	40
Hazardous Waste Management	DBMWM202	160	40
Third Year -			
Internship			

SCHEME OF EXAMINATION

Course	Course Code	Assessment			
		Hours	Internal	External	Total
First Year					
Liquid waste Management	DBMWM101	3	20	80	100
Second Year					
Solid Waste Management	DBMWM201	3	20	80	100
Hazardous Waste Management	DBMWM202	3	20	80	100
Third Year					
Internship					

First Year Diploma Bio medical Waste Management

DBMW 101 Liquid waste Management

300 Hours

Unit 1: Introduction- Waste Management

Liquid wastes: Municipal, Domestic and Industrial wastewater

Solid wastes: Municipal and Industrial Solid wastes

Environmental Engineering and Environmental Systems – an overview: Mass- balance approach to problem solving

Unit 2: Wastewater - Water resource and its significance

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Water: a remarkable substance of planet earth

Water pollution : Types, sources and impacts – Surface water, ground water pollution

Wastewater : Domestic – black and grey water, industrial and agricultural wastewater

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Unit 3: Wastewater Treatment

Flow – Sheets: Unit operations and unit processes , Primary treatment, Pre – treatment : Screening – bar racks, Grit removal, Communication, Flow – equalization., Sedimentation : Design concepts, Secondary treatment : Chemical unit processes: Precipitation, Coagulation, Disinfection Process design , Biological unit processes : nature and kinetics of biological growth : Aerobic process – activated sludge system, trickling filters , Anaerobic process – CSTR, Anaerobic Filters, UASB Oxidation ponds Process design. Advanced techniques: Membrane filtration, Gas stripping, Ion exchange, Advanced Oxidation Process (AOP).

Unit 4: Water reuse

Water reclamation and reuse: Water reclamation technologies – process flow diagrams; Public health and environmental issues in water reuse, Agricultural and landscape irrigation; ground water recharge with reclaimed water – ground water recharge guidelines; Risk assessment for water reuse, Industrial water reuse: Cooling tower makeup water.

Second Year Diploma Bio medical Waste Management

DBMWM201 Solid Waste Management

200 Hours

Unit 1: Types of solid wastes

Municipal solid waste, industrial wastes,, hazardous wastes, hospital solid wastes. Evolution of Solid Waste Management - Solid waste: A consequence of life - Waste generation in a technological society - Material flow and waste generation - The development of solid waste management - Integrated solid waste management - Planning for integrated waste management - Operation of solid waste management system.

Unit 2: Municipal Solid Waste Characteristics

Solid waste generation – Composition - Determination of composition, Particle size - Heat value - Bulk and material density - Types of materials recovered - Mechanical properties - Biodegradability.

Unit 3: Collection of Solid Waste, Refuse collection systems

Commercial wastes - Transfer stations - Collection of recyclable materials - Litter and street cleanliness - Design of collection system.

Unit 4: Solid waste treatments

Landfills - Classification - Types and methods. Biological process – Composting - production of biofertilisers and energy. Thermal process – Incineration, gasification, wet oxidation, pyrolysis, pelletisation and energy production. Waste management through Reduce, Recycle and Reuse. Hazardous waste management. Current Issues in Solid Waste Management - Public and private ownership and operations - Role of the solid waste engineering.

DBMWM202 Hazardous Waste Management

200 Hours

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Unit 1: Introduction

Definition and classification of hazardous waste- Need for hazardous waste management – Sources of hazardous wastes – Effects on community – terminology and classification – Storage and collection of hazardous wastes – Problems in developing countries – Protection of public health and the environment.

Unit 2: Nuclear Wastes and e-waste

Characteristics – Types – Nuclear waste – Uranium mining and processing – Power reactors – Refinery and fuel fabrication wastes – spent fuel – Management of nuclear wastes – Decommissioning of Nuclear power reactors – Health and environmental effects.

Unit 3: Biomedical and Chemical Wastes

Biomedical wastes – Types – Management and handling – control of biomedical wastes - Chemical wastes – Sources – Domestic and Industrial - Inorganic pollutants – Environmental effects – Need for control – Treatment and disposal techniques – Physical, chemical and biological processes – Health and environmental effects.

Unit 4: Physical and Chemical Treatments

Filtration and separation – Chemical precipitation - Solidification and stabilization technique – Chemical oxidation and Reduction – evaporation – ozonation – Evaporation. Remedial actions - Techniques: Containment techniques – In situ Biotreatment options – Site remediation – Phytoremediation – Bio filtration

CODE OF PROFESSIONAL CONDUCT

INTRODUCTION

The Code of Professional Conduct is designed and set out as guidance for the clinical practitioner within the relationship that exists with every patient receiving health care.

Essential to that relationship is the patient's trust in the practitioner. This trust hangs upon the patient's assurance of being the practitioner's first concern during their clinical encounter, and upon the patient's confidence that the care received will be competent, whether in diagnosis, therapy or counseling.

STANDARD OF PRACTICE AND CARE

Patients are entitled to the highest standard of practice and care. The essential elements of this are professional competence, good relationships with patients and colleagues and observance of professional ethical obligations.

Attending CTS
Attending care you must therefore:

- Recognize the limits of your professional competence.
- Be willing to consult colleagues
- Keep clear, accurate and contemporaneous patient records which report the relevant

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findings.

- Keep colleagues informed.
- Pay due regard to the efficacy and the prudent use of resources.
- Be competent, truthful, and accurate, when reporting on investigations.
- Be competent when giving or arranging treatment.

Patient's rights

- Listen to patients and respect their views.
- Treat patients politely and considerately.
- Respect patients' privacy and dignity.
- Give information to patients in a way they can understand.
- Respect the right of patients to be fully involved in decisions about their care.
- Respect the right of patients to refuse treatment or to take part in teaching or research, reporting the refusal to the person requesting the procedure.
- Respond to complaints promptly and constructively.
- Ensure that your views about a patient's life style, culture, beliefs, race, color, sex, sexuality, age, social status, or perceived economic worth, do not prejudice the service you give.

CONFIDENTIALITY

Patients have a right to expect that you will not pass on any personal information which you learn in the course of your professional duties, unless they agree

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