Certificate in Environmental Health Science

Rationale

Health problems or needs are increasing on daily bases in the community and that gives the health providers a challenge to cope with the complex health problems especially in a multy - disciplinary field of the Environmental Health and the control of communicable diseases. Due to the complex health problems there is need to prepare and empower health providers with knowledge and skills on handling the health related issues in environmental health.

Environmental Health (EH) is the assessment and management of environmental influences (e.g. chemical, physical, biological, social and psychosocial factors) on human health. This entails the study of food safety and hygiene (including production, distribution and fitness for human consumption), occupational health and safety (including investigation and control of work-related ill health), community health (communicable and non-communicable disease control and prevention, disaster management, health promotion and education), the built environment (including homes, workplaces and public spaces) and pollution control (including the control of the air, land and water). EH is about taking a preventative approach to tackling disease and ill-health rather than a curative approach.

The environmental health assistants will be able to implement the principles of risk assessment and management to address adverse environmental influences on health, improve the health of the community and contribute to sustainable development. They achieve this through professional practice by ascertaining, correcting, controlling, minimizing and preventing those factors in the environment that can potentially and adversely affect the health of present and future generations. The Environmental Health Assistant is usually a member of a multi-disciplinary team of health-care professionals, and is able to communicate effectively, foster entrepreneurship, uphold professional and environmental health ethics and manage human, financial and physical resources within the scope of profession.

Learning Outcome

On Completion of the course, Students should be able to:

- Implement the principles of risk assessment and management to address adverse environmental influences on health, improve the health of the community and contribute to sustainable development.
- Ascertain, correct, control, minimize and prevent factors in the environment that can potentially and adversely affect the health of present and future generations.
- Communicate effectively, foster entrepreneurship, uphold professional and environmental health ethics and manage human, financial and physical resources within the scope of profession.

Programme Convenor: Ms M.T. Bhembe – Email: mbhembee@idmbls.ac.sz

Programme Duration

- Part-Time : 18 Months
- Maximum (Years) 3 years

Admission Requirements

- O'level certificate with a minimum of 3 credits include English and Science subject two passes OR
- An assessed equivalent entry qualification, which may include prior learning

Assessment

Each module will be assessed over 100 marks with details as follows (unless otherwise specified):

- Assessment will be based on a written examination of 3-hour duration for modules carrying 20 credits and normally a paper of 2 hour duration for modules carrying less or equal to 15 credits, and on continuous assessment done during the semester or year.
- Written examinations for all modules will be carried out at the end of the academic year except for some semester modules (unless otherwise stated). Relevant information will be provided to the students prior to delivery of the modules.
- Continuous assessment may be based on laboratory work, seminars and/or assignments and should include at least 1 class test.
- Students will be admitted to examination if they have attended at least 80% of the lectures in that specific module.
- Conformed to IDM policies with regard to the payment of the required tuition and other relevant fees.
- A minimum of at least 40% should be attained in each of continuous assessment and written examination, with an overall total of 50% for a candidate to pass a module.
- Special examinations (e.g. class tests) will be arranged at the end of semester 1 or semester 2 for exchange students who have registered only for one semester. In case of yearly modules, credits will be assigned on a pro-rata basis.

The **Certificate in Environmental Health Services** comprises 150 credit points (18 Modules) and is designed to provide students with an introduction to this profession and equip them with the knowledge and skills to function effectively in the health industry, as presented below:

Year I: Semester 1		**CREDIT**	**CONTACT HRS / SEMESTER**
	Academic and Communication Skills	5 Credits	50 hrs
	Introduction to information and Communication Technology	15 Credits	150 hrs
	Maths	5 Credits	50 hrs
	Background to Public Health	5 Credits	50 hrs
	Human Anatomy and Physiology	10 Credits	100 hrs
	Environmental Health Education and Promotion	10 Credits	100 hrs
	Total	**50 Credits**	
Year 1: Semester II			
	Introduction to Microbiology, Parasitology and Immunology	10 Credits	100 hrs
	Communicable Diseases and their Control	10 Credits	100 hrs
	Food Safety and Hygiene	10 Credits	100 hrs
	Sociology (Community Health)	10 Credit	100 hrs
	Occupational Safety and Health	10 Credits	100 hrs
	Chemistry for Health Sciences	10 Credits	100 hrs

	Total	**50 Credits**	
Year 1I: Semester I			
	Vector , Vermin and Rodent Control	10 Credits	100 hrs
	Waste Management (Sanitation, Refuse Collection and Disposal)	10 Credits	100 hrs
	Introduction to Building Construction	10 Credits	100 hrs
	Disaster Management	10 Credits	100 hrs
	Introduction to Research Methods	5 Credits	50 hrs
	Physics for Heath Sciences	5 Credits	50 hrs
	Total	**50 Credits**	

MODULE DESCRIPTORS

YEAR 1: SEMESTER I

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1. ACADEMIC WRITING AND STUDY SKILLS

Credits: 5 Credits **Contact Hours per Semester: 50 hours**

This module aims at assisting students in the development of their writing, reading and speaking skills, in order to cope with studying in a new academic environment. Topics will cover: Language proficiency –written English and its application in essay writing and précis writing; Conventions of academic writing; Mechanisms and workings of oral language; Practical applications of paralinguistic features and non-verbal aspects; Job-oriented tasks (English-in-context works); Formal correspondence (letters, memos, reports, etc.) and critical book reading, analysis and reviewing.

Assessment: Continuous assessment50%: Examination 50% (1x2 hour examination paper)

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2. INTRODUCTION TO INFORMATION AND COMMUNICATION TECHNOLOGY

Credits: 10 Credits **Contact Hours per Semester: 100 hours**

Introduction to computers, Evolution of computers, Computer Hardware & Software, Input / Output Devices and Storage; Introduction to System Analysis and Design; Organisation of Data, Data Communication and Networks (LAN and WAN), Internet (uses and applications), Impact of Computer on Society; Future of Computing, Hands on practical involving office packages such as word processor, Excel sheets; PowerPoint, Access, E-mails; Introduction to Database Management Systems and Human Computer Interface Design and Evaluation of internet search engines.

Assessment: Continuous assessment 50%: Examination 50% (1x2 hour examination paper)

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3. MATHAMATICS

Credits: 5 Credits **Contact Hours per Semester: 50 hours**

Students will take the basic Mathematics module early in the curriculum of study. Therefore the module has been made as self-contained as possible, particularly in regard to the mathematics used. Only knowledge of elementary algebra is assumed, since problem solving is fundamental to the study of Environmental Health Science. Instrumental objectives are included at the beginning of each chapter as an indication of the level of proficiency sought.

Assessment: Continuous assessment 50%: Examination 50% (1x2 hour examination paper)

4. BACKGROUND TO PUBLIC HEALTH

Credits: 5 Credits **Contact Hours per Semester: 50hours**

Environmental health assistants form part of the health service providing team and thus there is a need to be aware of the basic health services in the country and their role in the primary health care and system, acquaint with the role of the International Agencies associated with the health care delivery system and be aware of the diseases that can occur as a result of poor environmental conditions.

Assessment: Continuous assessment 50%: Examination 50% (1x2 hour examination paper)

5. ELEMENTARY ANATOMY AND PHYSIOLOGY

Credits: 10 Credits **Contact Hours per Semester: 100hours**

This module will describe the normal human structure and function in a health context, pathology and physiology of humans which will include the circulatory, nervous, respiratory, endocrine, digestive and urinary systems in relation to the impact of exposure and health effects of chemical, biological, physical and psychosocial stressors

Assessment: Continuous assessment 50%: Examination 50% (1x2 hour examination paper)

6. ENVIRONMENTAL HEALTH EDUCATION AND PROMOTION

Credits: 10 Credits **Contact Hours per Semester: 100hours**

The concepts of health promotion and education will be explained as well as the principles of health promotion. This module will include topic: environmental factors affecting rendering of health services, policy formulation, planning and organising of services on both macro- and micro levels, staff management issues, quality control and specific infections etc.

Assessment: Continuous assessment 50%: Examination 50% (1x2hour examination paper)

YEAR 1: SEMESTER I I

7. MICROBIOLOGY, PARASITOLOGY AND IMMUNOLOGY

Credits: 10 Credits **Contact Hours per Semester: 100 hours**

This unit describes the structure and function of potential pathogens in relation to air and water/soil quality, the range of microorganisms found in air, food, water and soil, their origins and mechanism for dispersion / transportation as well as the application of relevant and appropriate microscope techniques for analysis. The students will learn the role of micro-organisms in air, food, water and soil in relation to pollution and pollution control. Key terms and principles pertaining to the survival, growth and destruction of microorganisms will be described.

Assessment: Continuous assessment 50%: Examination 50% (1x2 hour examination paper)

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8. COMMUNICABLE DISEASES AND THEIR CONTROL

Credits: 10 Credits **Contact Hours per Semester: 100hours**

This module aims to introduce students to the various communicable diseases prevalent in the country, the modes of transmission in addition to the pathogenesis of various micro-organisms. The students will be able to identify different groups that are at risk as well as equipping them with knowledge and skills to implement control programmes for communicable diseases.

Assessment: Continuous assessment 50%: Examination 50% (1x2 hour examination paper)

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9. FOOD SAFETY AND HYGIENE

Credits: 10 Credits **Contact Hours per Semester: 100 hours**

Given that food poisoning outbreaks are preventable and low-dose organisms such as E.coi 0157 have serious consequences, it is imperative that standards of food hygiene continue to be improved. This module will however cover Food poisoning, food borne diseases, Scientific principles for food safety, food contamination and its prevention, Nutrition safety and food quality, food storage, cleaning and disinfecting, pest control and hygiene legislation.

Assessment: Continuous assessment 50%: Examination 50% (1x3 hour examination paper)

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10. OCCUPATIONAL HEALTH AND SAFETY

Credits: 10 Credits **Contact Hours per Semester: 100hours**

All employees are potentially exposed to occupational safety and health risks in the workplaces. In this module students are introduced to various occupational safety and health concepts and are encouraged to develop the skills and knowledge required to make workplaces safer and healthier. Occupational safety and health is looked at from a national and international perspective by exploring safety and health in a variety of global industry

Assessment: Continuous assessment50%: Examination 50% (1x2 hour examination paper)

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11. CHEMISTRY FOR HEARTH SCIENCES

Credits: 10 Credits **Contact Hours per Semester: 100hours**

This module is aimed for students in various health related programs: The emphasis is based on the aspects of organic Chemistry, inorganic Chemistry and Biochemistry. Theoretic topics are dealt with as an aid to understanding bodily processes in Humans.

Assessment: Continuous assessment50%: Examination 50% (1x3 hour examination paper)

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12. SOCIOLOGY

Credits: 10 Credits **Contact Hours per Semester: 100hours**

The association between societal well-being and environmental quality is an important topic of Sociological inquiry. Environmental Sociology as a sub discipline within Sociology explores the various forms of interaction between human society and the environment. Environmental Sociologists seek to understand a variety of topics, including agrifood systems, environmentalism as a social movement, the ways in which societal members perceive environmental problems, the origins of human-induced environmental decline, the relationship between population dynamics, health, and the environment, and the role that elites play in harming the environment

Assessment: Continuous assessment50%: Examination 50% (1x3 hour examination paper)

YEAR 1I: SEMESTER I

13. INTRODUCTION TO RESEARCH METHODS

Credits: 5 Credits **Contact Hours per Semester: 50 hours**

This module is aimed to equip students with basic knowledge and skills of planning, conducting and reporting research. It focus is on developing an understanding of the nature of scientific research. Formulation of the research problem, research questions, hypotheses, research design, sampling, data collection and analysis and writing of research reports are covered. Techniques on reviewing literature will also be imparted to students. Both quantitative and qualitative methods for research in information science are included.

Assessment: Continuous assessment50%: Examination 50% (1x3 hour examination paper)

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14. VECTOR, VERMIN AND RODENT CONTROL

Credits: 10 Credits **Contact Hours per Semester: 100hours**

Vectors are animals which carry bacteria, parasites, viruses or other micro-organisms that are hazardous to human health. Environmental Health works to reduce the numbers of mosquitoes and midges to an acceptable level and to assist in limiting the spread of vector-borne diseases. Environmental Health and Regulatory Unit works constantly in various ways to reduce numbers of introduced rodent species in public areas without harming our native wildlife, including native rat species such as the giant white-tailed rate.

Assessment: Continuous assessment 50%: Examination 50% (1x3 hour examination paper)

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15. WASTE MANAGEMENT

Credits: 10 Credits **Contact Hours per Semester: 100hours**

Environmental health Sciences provides environmentally sustainable and cost effective approaches to managing contaminated soil and waste materials. Our soil waste management and disposal classification methods can create significant cost savings by minimising the amount of contaminated material taken to landfill.

Assessment: Continuous assessment 50%: Examination 50% (1x3 hour examination paper)

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16. INTRODUCTION TO BUILDING AND CONSTRUCTION

Credits: 10 Credits **Contact Hours per Semester: 100hours**

Discuss and understand the concepts of building and construction. This module will constitute: Basic understanding of building and construction, plans, drawings, sketching and symbols. Specifications: building materials and equipments, building suppliers and manufactures as well as roles of constructor and trades in construction.

Assessment: Continuous assessment50%: Examination 50% (1x2hour examination paper)

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17. DISASTER MANAGEMENT

Credits: 10 Credits **Contact Hours per Semester: 100hours**

Disaster management is a process or strategy that is implemented before, during or after any type of catastrophic event takes place. This process can be initiated whenever anything threatens to disrupt normal operations or puts people's lives at risk. Governments at all levels as well as many businesses create their own disaster plans that make it possible to overcome various catastrophes and return to functioning normally as quickly as possible. There are four essential parts to disaster management: prevention, preparation, relief and recovery.

Assessment: Continuous assessment50%: Examination 50% (1x3hour examination paper)

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18. PHYSICS FOR HEALTH SCIENCES

Credits: 5 Credits **Contact Hours per Semester: 50 hours**

This module is prompted by the conviction that student in Environmental Health, Nursing, the allied health sciences and other health related fields need a background which is broad in scope but which stresses the applications which will be of importance in their health science field. The emphasis given and the detailed applications are directed towards the needs of students in health sciences

Assessment: Continuous assessment50%: Examination 50% (1x3hour examination paper)
