

**BSc (Hons) Marine Environmental Sciences****(Under Review)**

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**1. CONTEXT AND OBJECTIVES**

Developing the Blue Economy is one of the major priorities of the Republic of Mauritius. Indeed, with an Exclusive Economic Zone of 2.3 million km<sup>2</sup>, the Republic of Mauritius, although small in landmass, has access to an ocean of resources. The concept of Blue Economy recognizes the productivity of healthy ocean ecosystems as a pathway for sustainable ocean-based economies, reduction of disaster risk and climate change impact. Given this demonstrated impact, marine sciences are priorities not only in Mauritius, but globally.

In this context, the Department of Biosciences and Ocean Studies offers a BSc (Hons) Marine Environmental Sciences that covers the study of marine life and surrounding environments, the threats to the systems, and sustainable development. The programme is designed in such a way that it provides the theoretical and practical underpinnings for higher education and/or career in a wide array of related disciplines. Core modules comprehensively cover topics such as principles and applications of marine and environmental sciences, biodiversity, ecology and conservation, marine resources and biotechnology, oceanography, geology, meteorology and climate science, fisheries science, aquaculture, remote sensing and GIS, integrated coastal zone and ocean management, Law of the Sea. In the final year, a research project plays a prominent role when the student is given the opportunity to answer a research question through laboratory and/or field-based investigations. Throughout their studies, students will be provided with the opportunity to undertake fieldwork in coastal environments.

The objectives of this BSc (Hons) Marine Environmental Sciences programme are to:

1. provide the opportunity to graduates to be employable across careers in the Blue Economy Sector, designated to be of national and global priority;
2. generate enthusiastic graduates who may consider further studies such as MSc and MPhil/PhD degrees to build higher level capacity.

**2. LEARNING OUTCOMES**

Upon completion of this programme, students should

1. have acquired fundamental knowledge in marine environmental sciences;
2. have mastered the subject jargon and developed skills to express their acquired knowledge in both written and oral form, with proper referencing of information sources;
3. have developed scientific problem-solving skills, critical thinking skills and technical/tactile aptitudes in marine environmental sciences;
4. be able to demonstrate creativity through design of experimental strategies in marine environmental sciences;
5. be able to critically appraise, evaluate and analyse data;
6. be able to critically appraise, evaluate and analyse scientific literature;
7. have the capacity to apply knowledge and skills acquired to real world contexts;
8. have developed their emotional intelligence to enable them to harness the team spirit and to efficiently work in diverse groups;
9. have acquired general employability skills such as, but not limited to: teamwork, self-management, problem-solving, application of numeracy and statistics, application of information technology, communication skills, respect and ethics.

### 3. TEACHING AND LEARNING METHODS

The programme adopts a blended teaching and learning approach. Course modules are delivered with a mix of face-to-face and online classes, self-study periods and innovative student-centred activities to encourage active rather than passive learning to achieve the above outcomes. Methods of teaching and learning include, but are not limited to: lectures, tutorials, laboratory/field/computer-based practicals, case studies, mini-projects, seminars, visits, debates, scientific paper appraisals, oral/poster presentations, audiovisual aids, quizzes, critical essays, role-playing, peer teaching.

### 4. ENTRY REQUIREMENTS

- **General Requirements**
  - As per General Entry Requirements for admission to the University for Undergraduate Degrees.
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- **Programme (Specific) Requirements**
  - Pass at GCE 'A' level in at least two Science subjects: Mathematics, Biology, Chemistry, Physics, Marine Science or acceptable equivalent qualifications.
  - Students will be expected to undertake fieldwork including water-related activities in coastal environments

### 5. PROGRAMME DURATION

The programme is offered on a full-time basis.

	<b>Normal</b>	<b>Maximum</b>
Degree	3 years (6 semesters)	5 years (10 semesters)

### 6. MINIMUM LCCS CREDITS REQUIRED

For Award of BSc (Hons) Marine Environmental Sciences, students must obtain at least 200 LCCS credits, including 180 LCCS credits from core modules and 20 LCCS credits from the Final Year Research Project, as per table below.

<b>Year</b>	<b>No. of Core Modules/LCCS Credits</b>	<b>Project</b>	<b>Total LCCS Credits</b>	<b>No. of Learning Hours</b>
Year 1	9/72	-	72	2160
Year 2	9/72	-	72	2160
Year 3	3/36	1/20	56	1680
<b>TOTAL</b>	<b>21/180</b>	<b>1/20</b>	<b>200</b>	<b>6000</b>

Exit points for “Certificate in Marine Environmental Sciences” and for “Diploma in Marine Environmental Sciences” will be determined as per criteria below taken *in toto*, as stipulated by UoM General Regulations:

<b>Criteria</b>	<b>Certificate in Marine Environmental Sciences</b>	<b>Diploma in Marine Environmental Sciences</b>
1. Minimum total no. of LCCS credits	60	120
2. Minimum total no. of core LCCS credits prescribed in programme	50	100
3. Minimum no. of programme core LCCS credits drawn from departmental core modules	37.5	75

### **LCCS Credits per year**

Minimum 12 LCCS credits/ yearly; Maximum 96 LCCS credits/ yearly

## **7. ASSESSMENT AND DEADLINES**

### ***Assessment***

Each module will carry 100 marks (expressed as %) and will be assessed as follows:

- Assessment for each module will be based on a written examination and continuous assessment unless otherwise specified. Written examinations for yearly modules will take place at the end of Semester 2. Written examinations for semester modules, whether taught in Semester 1 or in Semester 2, will be carried out at the end of the Semester in which they are taught (unless otherwise stated). Assessment will be based on a written examination of 3-hour duration for modules bearing 12 LCCS credits and of 2-hour duration for modules bearing 6 LCCS credits. Continuous assessment will account for 40% of the overall percentage mark for all modules, except where otherwise specified. Continuous assessment may be based on laboratory/field work, and/or assignments and should include at least 1 class test. All students should keep a portfolio of all coursework.
- The Research Project, MES 3000Y(5), will be assessed through a dissertation, an oral presentation and general performance throughout project duration.
- An overall total of 40% for combined Continuous Assessment and Written Examination components is required to pass a module without minimum thresholds within the individual continuous assessment and written examination.
- Weighting for a particular module is indicated within parentheses in the module code.
- Students may opt to take audit modules BOS 1001 and BOS 1002 during their course of study. These audit modules do not carry any LCCS credit or grade but would appear in their transcript subject to satisfactory attendance.

### ***Deadlines***

MES 3000Y(5) Research Project:

- (i) Students should abide by the UoM deadlines for submission of their project dissertation;
- (ii) Students are expected to submit a complete draft of their project dissertation, together with the Turnitin Report, to their supervisor(s) at least four weeks prior to the UoM final submission deadline.

## 8. LIST OF MODULES

### A. Audit Modules

Code	Module Name	HRS/YR
BOS 1001	Fundamentals of Biology	45
BOS 1002	Chemistry for Biologists	30

### B. Core Modules

Code	Module Name	Contact Hrs	Self-Study/Hrs	Other Learning Activities/Hrs	LCCS Credits
<b>Year 1</b>					
MES 1001Y(1)	Principles of Marine and Environmental Sciences	30	60	90	6
MES 1002Y(1)	Marine and Coastal Biodiversity	60	120	180	12
MES 1003Y(1)	Coastal and Marine Ecosystems and Functions	60	120	180	12
MES 1004Y(1)	Marine Resources	30	60	90	6
MES 1005Y(1)	Introduction to Oceanography	60	120	180	12
MES 1006Y(1)	Understanding Sustainable Development	30	60	90	6
MES 1007Y(1)	Meteorology and Climate Science	30	60	90	6
MES 1009Y(1)	Introduction to Geology	30	60	90	6
BOS 1201(1)	Research Methods	30	60	90	6
<b>Year 2</b>					
BOS 2101(3)	Biostatistics and Experimental Design	30	60	90	6
MES 2001Y(3)	Environmental Monitoring and Assessment	30	60	90	6
MES 2002Y(3)	Marine Microbiology and Biotechnology	60	120	180	12
MES 2003Y(3)	Environmental Hazards, Disasters and Risks	30	60	90	6
MES 2004Y(3)	Pollution and Ecotoxicology	60	120	180	12
MES 2005Y(3)	Global Environmental Change	30	60	90	6
MES 2006Y(3)	Geographical Information Systems and Remote Sensing	30	60	90	6
MES 2008Y(3)	Fisheries Science	60	120	180	12

MES 2009Y(3)	Aquaculture	30	60	90	6
<b>Year 3</b>					
MES 3001Y(5)	Integrated Coastal Zone and Ocean Management	60	120	180	12
MES 3002Y(5)	Law of the Sea and Ocean Governance	60	120	180	12
MES 3003Y(5)	Marine Environmental Protection, Conservation and Management	60	120	180	12
MES 3000Y(5)	Research Project				20

## 9. PROGRAMME PLAN

Code	Module Name	Contact Hrs	Self-Study/Hrs	Other Learning Activities/Hrs	LCCS Credits
<b>Year 1, Semesters 1 &amp; 2</b>					
MES 1001Y(1)	Principles of Marine and Environmental Sciences	30	60	90	6
MES 1002Y(1)	Marine and Coastal Biodiversity	60	120	180	12
MES 1003Y(1)	Coastal and Marine Ecosystems and Functions	60	120	180	12
MES 1004Y(1)	Marine Resources	30	60	90	6
MES 1005Y(1)	Introduction to Oceanography	60	120	180	12
MES 1006Y(1)	Understanding Sustainable Development	30	60	90	6
MES 1007Y(1)	Meteorology and Climate Science	30	60	90	6
MES 1009Y(1)	Introduction to Geology	30	60	90	6
<b>Year 1, Semester 2</b>					
BOS 1201(1)	Research Methods	30	60	90	6
<b>Year 2, Semester 1</b>					
BOS 2101(3)	Biostatistics and Experimental Design	30	60	90	6
<b>Year 2, Semesters 1 &amp; 2</b>					
MES 2001Y(3)	Environmental Monitoring and Assessment	30	60	90	6
MES 2002Y(3)	Marine Microbiology and Biotechnology	60	120	180	12
MES 2003Y(3)	Environmental Hazards, Disasters and Risks	30	60	90	6
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MES 2006Y(3)	Geographical Information Systems and Remote Sensing	30	60	90	6
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MES 2009Y(3)	Aquaculture	30	60	90	6
<b>Year 3, Semesters 1 &amp; 2</b>					
MES 3001Y(5)	Integrated Coastal Zone and Ocean Management	60	120	180	12
MES 3002Y(5)	Law of the Sea and Ocean Governance	60	120	180	12
MES 3003Y(5)	Marine Environmental Protection, Conservation and Management	60	120	180	12
MES 3000Y(5)	Research Project				20