

# MSc Sustainable Energy Engineering with Environmental Management (S3EM) – E512

## 1. Introduction

The world is facing many environmental problems together with energy security issues. The increasing demand for energy is not only compromising the use of the available energy resources but also causing several problems which are affecting the environment. In the present time, the biggest environmental problems associated with energy are global warming and climate change. With the increasing level of environmental problems and energy issues, there is hence an urgent need to provide proper capacity building to address these problems.

The Sustainable Energy Engineering and Environmental Management (S3EM) programme provides a state-of-the-art knowledge in the field of energy engineering and environmental management. The programme focuses on energy production and management, green energy, environmental management, climate change and sustainable development together with the economic aspects. The S3EM programme prepares the graduates with the necessary knowledge and skills in order to resolve or propose solutions for multi-disciplinary problems in energy engineering and environmental management. The programme provides graduates with the proper tools and knowledge to develop, implement, monitor and evaluate energy and/or environmental management strategies, policies and projects. The programme will also enable the graduates to be amongst the new team of professionals who will lead the energy and environmental revolution.

## 2. Aims and Objectives

The programme aims to provide technical understanding, knowledge and expertise in conventional and renewable energy sources taking the social and environmental aspects into consideration. The programme has been designed to equip graduates with the necessary knowledge, problem solving and technical skills in order to address problems in energy engineering and environmental management.

The main objectives of the programme are as follows:

- To develop in-depth knowledge in a variety of clean technologies relevant for energy and environmental engineering/management;
- To understand tools that can be used for assessing the options for improving the environmental and energy impacts of products and production processes;
- To efficiently analyse alternative energy policy options in terms of risks, benefits and costs;
- To apply the use of renewable energy technologies in industries in order to promote low-carbon development and green productivity;
- To understand the concept of sustainable development and the relationships between resource utilization, production processes, societal processes and environmental pressure.

## 3. General Entry Requirements

Successful completion of an undergraduate degree with at least a Second Class or 50% whichever applicable or a GPA not less than 2.50, or equivalent, from a recognized higher education institution or alternative qualification acceptable to the UoM.

#### 4. Programme Requirements

At least a Second Class honours degree in Science, Engineering and/or Agriculture related subjects or an alternative equivalent qualification acceptable to the University of Mauritius.

Preference will be given to candidates with relevant work experience.

#### 5. General and Programme Requirements – Special Cases

The following may be deemed to have satisfied the General and Programme requirements for admission:

- (i) Applicants who do not satisfy any of the requirements as per Regulations 3 and 4 above but who submit satisfactory evidence of having passed examinations which are deemed by the Senate to be equivalent to any of those listed.
- (ii) Applicants who do not satisfy any of the requirements as per Regulations 3 and 4 above but who in the opinion of Senate submit satisfactory evidence of the capacity and attainments requisite to enable them to pursue the programme proposed.
- (iii) Applicants who hold a full practising professional qualification obtained by examination.

#### 6. Programme Duration

The Programme will be offered on a part-time basis. The duration of the Graduate Programme should normally not exceed 4 years (8 semesters).

	<b>Normal</b>	<b>Maximum</b>
Master's Degree	4 Semesters	8 Semesters

7. **Credits Per Semester:** Minimum 3 credits per semester and Maximum 24 credits per semester.

#### 8. Minimum Credits Required For Awards

Master's Degree	36
Postgraduate Diploma	24
Postgraduate Certificate	12

Breakdown as follows:

	<b>Core Taught Modules (Min)</b>	<b>Project</b>	<b>Elective Modules</b>
Master's Degree	24 credits	9 credits	3 credits
Postgraduate Diploma	21 credits		3 credits
Postgraduate Certificate	12 credits		

## 9. Assessment

Students are required to register for modules which they intend to follow in a given semester on date(s) specified by the Faculty.

Each module will carry 100 marks and will be assessed as follows (unless otherwise specified):

- Written examination of 2-hour duration and continuous assessment of **30% to 40%** of total marks.
- Continuous assessment may be based on seminar and/or assignments and **will include at least one class test per module.**

An overall total of **40%** for combined assessment and written examination components would be required to pass the module, without minimum thresholds within the individual continuous assessment and written examination.

All modules carry equal weight.

The Project carries 9 credits.

Submission Deadline for Dissertation: As per University Policy.

## 10. Plan of Study

Students are required to submit at the end of Semester 1 a Plan of Study for their whole Programme of Studies, indicating the list of elective modules and in which semester each of them will be taken.

The University reserves the right not to offer a given elective module if the critical number of students is not attained and/or for reasons of resource constraints.

## 11. List of Modules

Code	Module Name	Hours/week (L+P)	Credits
<b>CORE MODULES</b>			
CHE 6107	Energy Technology & Production	3+0	3
CHE 6108	Principles of Environmental Engineering	3+0	3
CHE 6109	Engineering Economics	3+0	3
CHE 6110	Renewable Energy Technologies	3+0	3
CHE 6111	Research Methods	3+0	3
CHE 6112	Environmental Management & Sustainability	3+0	3
CHE 6207	Energy Utilisation & Management	3+0	3
CHE 6208	Energy and Environmental Policies	3+0	3
<b>PROJECT</b>			
CHE 6001	Project	-	9
<b>ELECTIVE MODULES</b>			
CHE 6209	Energy and Climate	3+0	3
CHE 6210	Emerging Energy Technologies	3+0	3

Students have to complete ALL core taught modules, the degree project work and ANY one (1) elective.

**NOTE:**

Each module will consist of 45 contact hours. The total contact (taught) hours of the Programme therefore will be 405 hours. The Project will involve an equivalent of 180 working hours including direct supervision by a member of academic staff and/or an external supervisor.

A minimum of 6 contact hours is scheduled per week (3 hours on weekdays and 3 hours on Saturday).

However, candidates are expected to attend daily normally after 4.00 p.m., for intensive modules taught in a period of two/three weeks by visiting lecturers.

**12. Programme Plan - MSc Sustainable Energy Engineering with Environmental Management**

YEAR 1							
Semester 1				Semester 2			
Code	Module Name	Hrs/Wk	Credits	Code	Module Name	Hrs/Wk	Credits
		L+P				L+P	
<b>CORE</b>				<b>CORE</b>			
CHE 6107	Energy Technology & Production	3+0	3	CHE 6110	Renewable Energy Technologies	3+0	3
CHE 6108	Principles of Environmental Engineering	3+0	3	CHE 6111	Research Methods	3+0	3
CHE 6109	Engineering Economics	3+0	3	CHE 6112	Environmental Management & Sustainability	3+0	3
YEAR 2							
Semester 1				Semester 2			
Code	Module Name	Hrs/Wk	Credits	Code	Module Name	Hrs/Wk	Credits
		L+P				L+P	
<b>CORE</b>				<b>CORE</b>			
CHE 6001	Project	-	-	CHE 6001	Project	-	9
CHE 6207	Energy Utilisation & Management	3+0	3	CHE 6208	Energy and Environmental Policies	3+0	3
<b>ELECTIVE</b>				<b>ELECTIVE</b>			
CHE 6209	Energy and Climate	3+0	3	CHE 6210	Emerging Energy Technologies	3+0	3