

20
26

Master of Science
in Sustainable Energy
Course Brochure



Table of Contents

ii

List of tables
List of figures

2

Course Objectives

Goal
Aim
Specific objectives

Admission Criteria

5

Modules Covered

Module listing
Module descriptors

9

Contacts

iii

**Abbreviations and
Acronyms**

3

**Programme Duration
Mode of Delivery**

7

**Why Choose this
Programme**

1

Introduction

4

**Fees and
Scholarships**

Fees
Scholarships

**Programme
Structure**

8

**Career Opportunities
Application Timeline**

List of tables

Table 1: Module structure for the MSE degree programme

5

Table 2: Important dates

8

List of figures

Figure 1: Master of science in sustainable energy programme structure

5

**JOIN
MUBAS**

The
Home of
Innovation



Abbreviations and Acronyms

MSE	MSc in Sustainable Energy
MUBAS	Malawi University of Business and Applied Sciences
SoE	School of Engineering
HoAD	Head of Academic Department
PAC	Postgraduate Academic Committee
PG	Postgraduate
PGS	Postgraduate Studies
PGT	Postgraduate Taught
ED	Executive Dean
SADC	Southern Africa Development Community

Introduction

Malawi University of Business and Applied Sciences (MUBAS), formerly the Polytechnic, one of the four constituent colleges of University of Malawi, is a dynamic institution of higher learning in Malawi and the Southern Africa Development Community (SADC) region, responding to the needs of the society in line with its mission: “To advance knowledge and professional competencies in science, technology, commerce and communication through excellence in demand-driven education, research, consultancy and outreach”. This is done through teaching (training) and research in the School of Engineering (SoE), one of the five academic schools. The SoE has four departments: Mechanical, Electrical, Civil and Mining Engineering.

The over-reliance on traditional biomass in the form of firewood and charcoal, which are sourced from trees and forest unsustainably, has resulted in deforestation, and forest and landscape degradation. These have exacerbated the impact of environmental and climate change on the country’s economy. Characterisation of the energy needs can be addressed through training at the postgraduate level.

The Masters of Science in sustainable energy (MSE), programme will give students the necessary knowledge to support infrastructural growth, industrialization, energy production, and technical innovation, supporting Malawi’s better future and aligning with national development objectives. Universities, such as MUBAS, are essential institutions in producing competent human resources for national development. For instance, realizing the overarching national development policy for the country, Malawi 2063, requires competent human resources. Therefore, the academic programme curriculum has been designed to meet the needs of the industry and the nation in general.



Course Objectives

Goal

The goal of the programme is to train the human resource cadre to provide solutions to energy access challenges in Malawi and the SADC region and targets engineering and science graduates, energy professionals, government and

policymakers, researchers and academics, entrepreneurs and business professionals, environmental and sustainability specialists, and development and NGO sector workers.

Aim

The programme aims to equip students with advanced knowledge, concepts and practices of sustainable energy access so

that they can apply them in solving energy access challenges in Malawi and the SADC region.

Specific Objectives

The specific objectives of the programme are to:

- a. Train students in the theory and practice of sustainable energy access, to address the hard skills gaps.
- b. Equip students with research and development skills in energy access.
- c. Provide students with practical experience in the design and installation of renewable energy systems.
- d. Equip students with ICT skills in the design and management of sustainable energy technologies.
- e. Equip students with skills in entrepreneurship and sustainability of energy projects.
- f. Prepare the students for a research career in energy access (life-long learning).

Admission Criteria

The admission criteria are contained in the postgraduate handbook. The specific specialisations have also been indicated in Figure 1. In general, the following provides the main requirements for admission:

- a. Applicants for the energy access stream must have a bachelor's degree in science, engineering, renewable energy, built environment, technical education or equivalent from any accredited higher learning institution.
- b. Applicants for the energy management stream must have a relevant bachelor's degree in science, engineering, built environment, renewable energy, technical education, commerce, social science or equivalent from any accredited higher learning institution.

Applicants are encouraged to refer to the MUBAS advert and may be interviewed to assess the relevance and suitability of their qualification.

Programme Duration

The recommended duration for the MSE degree programme is four and six semesters; for fulltime and part-time, respectively. The details are prescribed in the MUBAS postgraduate handbook. The

postgraduate academic committee can give an extension to both full-time and part-time students as prescribed in the postgraduate handbook.



Mode of Delivery

The programme mode of delivery shall be both face-to-face (in-class) and online on block release. A module is delivered within four weeks, consisting of one week of intense in-person lectures, demonstrations, group activities, student presentations and tutorials. This is followed by a one-week

online delivery and later a two-week self-study and assignments followed by one day of in-class examination. In-class lectures could be complemented by further online presentations and discussions involving the students and the lecturers.

Fees and Scholarships

Fees

The Master of Science in Sustainable Energy is a two-year programme comprising four semesters. Tuition fees is US\$1,625.00 per semester and it is US\$6,500 for the complete duration. The students

are also expected to cover the costs of research, living expenses and dissertation preparation costs. [Refer to the advert](#)

Scholarships

Candidates are encouraged to refer to MUBAS website for various scholarships

available. Two scholarships that have benefitted the programme are shown.

A. Liechtenstein REED

This has been offering stipend scholarships to candidates and detailed information is in the link below:

<https://www.mubas.ac.mw/news/liechtenstein-reed-scholarship-master-of-science-in-sustainable-energy-call-for-2025-applications-03-08-2025>

B. ASIM

This is an open scholarship that has been offering stipend scholarship to candidates and detailed information is in the link below:

<https://www.mubas.ac.mw/news/call-for-applications-credit-seeking-asim-scholarship-06-03-2025>

Programme Structure

The MSE programme is multidisciplinary having modules in engineering, renewable energy, entrepreneurship, management, and economics. The programme has two streams: Energy Access and Energy Management and as shown in Figure 1, the programme has one entry point (in the first year) and two exit points. The entry point is at the start of the first semester in the first year, for those applicants that satisfy the admission requirement. The first exit point

is for a student who has completed all the taught modules, but due to other reasons is unable to proceed to or complete the second year. At this point, the student shall exit with a Postgraduate Diploma in Sustainable Energy. The second exit point is at the end of the second year when the student has completed the dissertation. The student shall exit with an MSE degree.

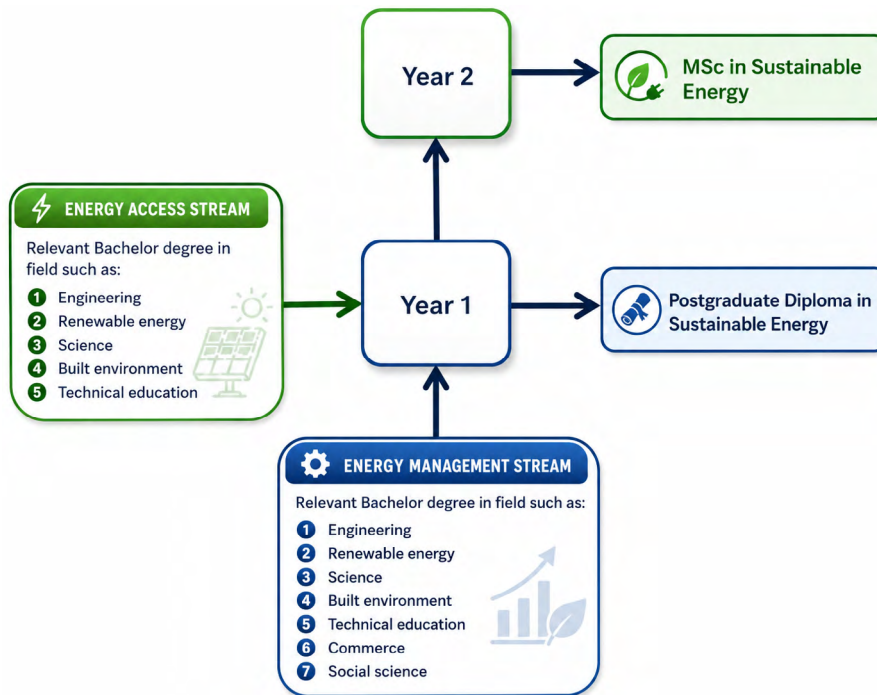


Figure 1: Master of science in sustainable energy programme structure

Modules Covered

Module Listing

Table 1: Module structure for the MSE degree programme.

YEAR ONE			
SEMESTER	MODULE CODE	MODULE TITLE	CREDITS
1	MEC-RER-521	Renewable Energy Resources	15
	MEC-PRM-511	Project Management	15
	MEC-ENT-511	Entrepreneurship	15
	MEC-MQM-511	Maintenance and Quality Management	15
TOTAL FOR SEMESTER			60
2	MEC-REM-511	Research Methodology	15
	MEC-SES-521	Solar Energy Systems ^{EA}	15
	MEC-BES-521	Biomass Energy Systems ^{EA}	15
	MEC-REI-521	Renewable Energy Systems Installation ^{EA}	15
	MEC-ENE-521	Energy Economics ^{EM}	15
	MEC-ENP-521	Energy Policy ^{EM}	15
	MEC-ENM-521	Energy Management ^{EM}	15
TOTAL FOR SEMESTER			60
TOTAL FOR YEAR ONE			120
YEAR TWO			
SEMESTER	MODULE CODE	MODULE TITLE	CREDITS
1 & 2	MEC-DIS-621	Dissertation	120
TOTAL FOR YEAR TWO			120
TOTAL FOR PROGRAMME			240

Key: EA – Energy Access, EM – Energy Management

Module Descriptors

MEC-RER-521: Renewable Energy Resources

This module equips the student with relevant theories for harnessing replenishable energy technologies from natural sources and their integration, with a focus on solar, wind, hydro, biomass, and geothermal. Students will also learn resource assessment methods using tools like GIS, RetScreen, and HOMER, along with environmental and social impact evaluation.

MEC-ENT-511: Entrepreneurship

This module enhances students' skills to develop and launch successful business ventures in sustainable energy. The students learn about entrepreneurship concepts, business models, value creation, customer development, funding, and legal considerations, while providing practical skills in business planning and resource management.

MEC-REM-511: Research Methodology

This module will equip a student with the knowledge and skills to undertake scholarly research. The student will learn about various aspects including the process of conducting research, research design and methods of data collection, research instruments and ethics and manuscript production.

MEC-BES-521: Biomass Energy Systems

This module will equip the student with knowledge and skills about biomass energy systems design and performance. Students will also learn about how to estimate energy demand for users of biomass systems and design biomass energy systems according to energy demand, resource base and regulations and how to supply gas from biomass energy systems to a community.

MEC-PRM-511: Project Management

This module prepares the student to plan, lead, organise and control a project from commencement to the completion. Among other issues, students will develop skills in budgeting, risk management, procurement, ethics, communication and teamwork, while also learning to apply professional work scheduling tools and software for effective project delivery.

MEC-MQM-511: Maintenance and Quality Management

This module equips students with the concepts and theories of maintenance and quality management for effective system performance. Students will explore modern maintenance strategies, reliability, planning, scheduling, and the use of software tools for maintenance tracking.

MEC-SES-521: Solar Energy Systems

This module will equip students with knowledge and skills about solar PV and solar thermal energy systems design using and performance. The students will learn about how to supply solar PV off-grid electricity to a community of software and use modeling softwares such as HOMER, RET Screen, SolSim, and TRNSYS.

MEC-REI-521: Renewable Energy Systems Installation

This module will equip students with knowledge and skills in installing solar PV, solar thermal and biomass systems. Students will be taught about tools and instruments used in solar and biomass systems installation and their design and performance evaluation using relevant engineering practices.

MEC-ENE-521: Energy Economics

This module equips a student with knowledge about the economics of energy as a scarce resource through concept like demand and supply analysis, energy markets, electricity economics, fossil fuel economics, and alternative financing options. Students will also gain skills in energy system modelling to explore the links between energy, the economy, and the environment.

MEC-ENP-521: Energy Policy

This module will equip students with knowledge and skills on the policy formulation process and how energy policy influences investment and design of renewable energy interventions. Students shall gain essential skills in policy drivers, barriers to implementation, enablers of renewable energy adoption, and compliance instruments, and be able to review national and international policy frameworks that support investment in renewable energy.

MEC-ENM-521: Energy Management

This module will equip students with knowledge and skills on how to manage and utilize energy efficiently. Students will explore energy metrics, energy efficiency, supply- and demand-side management, energy auditing and conservation methods in key energy systems such as lighting, cooking, and heating.

MEC-DIS-621: Dissertation

This module provides a student with an opportunity to engage in comprehensive scholarly research work in sustainable energy under supervisory guidance. The student will critically review literature, write a research proposal, undertake research, analyse data, write a manuscript and present research work.

Why Choose this Programme?

1. The first of its kind in Malawi and among the few in the Southern African Development Community (SADC) region, hence positioning graduates at the forefront of energy access and management expertise within the region.
2. Designed to respond to the evolving energy sector needs in the Malawi energy sector by tackling contemporary energy challenges and national development priorities.
3. Strategically aligned with the three pillars of Malawi 2063: Agricultural productivity and commercialisation, industrialisation, and urbanisation by developing professionals to drive the sustainable and inclusive energy solutions.
4. The multidisciplinary nature of the programme makes it relevant to solving the diversified needs of the energy access sector of Malawi and the SADC region.

Career Opportunities

Graduates can work in sectors within renewable energy, energy policy and consulting, energy management and efficiency, research and development, corporate and industrial sustainability, government and public sector, non-profit and international development and academia and education

Career opportunities are not exhaustive, but the following are typical opportunities:

- i. Bioenergy Consultant
- ii. Building Energy Efficiency Specialist
- iii. Carbon Market Analyst
- iv. Climate Change Analyst
- v. Educational Programme Developer
- vi. Energy Manager
- vii. Energy Policy Analyst
- viii. Energy Storage Specialist
- ix. Entrepreneur
- x. Environmental and Energy Consultant
- xi. Environmental Policy Advisor
- xii. Geothermal Energy Analyst
- xiii. Green Supply Chain Manager
- xiv. Hydrogen Energy Researcher
- xv. Hydropower Engineer
- xvi. International Development Officer
- xvii. Lecturer/Professor
- xviii. Project Manager in Energy
- xix. Renewable Energy Researcher
- xx. Smart Grid Analyst
- xxi. Solar Energy Engineer
- xxii. Sustainability Consultant
- xxiii. Sustainability Officer
- xxiv. Wind Energy Specialist

Application Timeline

Table 2: Important dates

Deadline for application into the programme	Candidates can apply for admission at any time during the academic year. For the September 2026 intake, the deadline is 31 May 2026 https://www.mubas.ac.mw/announcements/postgraduate-programmes-september-2026-intake-call-for-applications
Notification of acceptance into programme	24 July 2026
Release of offer letters	27 – 31 July 2026
Scholarship selection	TBA
Notification of scholarship recipients	TBA
Orientation dates	17 and 21 August 2026
Registration deadline	TBA
Fee payment deadline	On the registration date. Payment by instalments attracts a 10% interest payable within the first three months of each semester. A minimum of 25% of the applicable fees is required during registration in each semester.
Semester dates	Semester 1 (Taught modules-Block release): 05 October 2026 – 01 February 2027 Semester 2 (Taught modules-Block release): 22 March 2027 – 12 July 2027 Semester 3&4 (Research) Dissertation: 01 October 2027 – 30 October 2027 Tentative graduation: June 2028



Contacts

The Head of Mechanical
Engineering Department
Malawi University of Business and Applied Sciences,
Private Bag 303, Chichiri, Blantyre 3.

- 📍 School of Engineering Building,
Office, E306
- ✉ head-mech@mubas.ac.mw
- 👉 www.mubas.ac.mw



Transforming Energy Access
LEARNING PARTNERSHIP



Transforming
Energy
Access



LISD
LIECHTENSTEIN INSTITUTE FOR
STRATEGIC DEVELOPMENT

