

Programme Overview

The Master of Science in Environmental Science programme at Maasai Mara University is designed to equip students with an understanding of environmental issues and management. This programme is structured to produce graduates who possess in-depth knowledge and skills, enabling them to pursue careers in both the private and public sectors within the environmental management industry. The programme's philosophy emphasizes interdisciplinary graduate study and research opportunities, providing students with a broad understanding of natural resources, covering scientific, technical, socio-political, legal, and economic issues related to the environment.

The curriculum focuses on understanding various aspects of the physical environment through specialized areas. It addresses environmental changes resulting from human activities and emphasizes research on trends and issues using advanced technologies like Geographic Information Systems. This approach helps students develop critical thinking skills and the ability to conduct independent research. Additionally, the programme fosters skills for working collaboratively on challenging projects, enhancing interpersonal, communication, and conflict resolution skills essential for teamwork and interaction with diverse cultures and communities. This skill set is crucial for addressing complex environmental challenges.

Programme Details for the Master of Science in Environmental Science

The programme is structured to provide a comprehensive education in environmental management and related fields.

Duration

The programme is designed to be completed in 2 years for full-time students.

Credits Required

To successfully graduate from the programme, students must complete a total of 4 credit hours per week. Over a semester of 13 weeks, this translates to a total of 52 credit hours. To meet the graduation requirements, a candidate must have completed a minimum of 780 instructional hours. This requirement ensures that students have received sufficient instruction and engagement in their studies.

Teaching Language

The programme is conducted entirely in English. This choice of language facilitates a broad range of students from different backgrounds and regions, promoting a diverse and inclusive learning environment.

Start Dates

The programme offers two start dates each year, in September and May. This biannual intake provides flexibility for students to begin their studies at a time that best fits their schedule and allows for better planning of their academic journey.

Curriculum Structure

The curriculum structure of the programme is designed to provide education in environmental science, integrating various components to ensure a well-rounded academic experience.

Duration: Two (2) academic years

Total Credits Required: 60 credit hours

Course work: 54 credit hours

Thesis: 6 credit hours

First semester: Core courses for all specializations

Second semester: Specialization courses

Second year: Research project and thesis

Core Courses

The core courses cover fundamental topics such as the evolution, composition, and structure of the earth's atmosphere, air movements, environmental cycles and the impact of these cycles on climate and human health. Additional core content includes the study of environmental gradients, structure, composition, and population dynamics of flora and fauna

Specialization Tracks

The curriculum is focused on understanding various aspects of the physical environment through specific areas of specialization. This is achieved by emphasizing research on environmental trends and issues using technology like Geographic Information Systems. The programme offers diverse specialization tracks that cater to different aspects of environmental science. In Environmental Biology, students explore biological conservation, ecological research methods, and various ecosystem types including tropical forests, wetlands, and marine environments. The track covers critical areas such as environmental stress on biota, biotechnology, and restoration ecology.

The Environmental Economics track combines economic principles with environmental management, covering areas such as microeconomics, econometrics, and environmental

policy. Students learn about environmental project analysis, trade impacts, energy systems, and the economics of both renewable and non-renewable resources.

In Environmental Health, the focus is on chemical analysis, toxic substances, and environmental safety. This specialization includes study of environmental toxicology, microbiology, water health, waste management, and atmospheric chemistry, with emphasis on risk assessment and environmental impact on human health.

The Environmental Information Systems track equips students with technical skills in remote sensing, Geographic Information Systems (GIS), and digital image processing. Students learn about environmental mapping, computer-assisted cartography, and photogrammetry for environmental analysis.

Environmental Law specialization covers comprehensive legal aspects of environmental management, including land use law, environmental litigation, water resources law, and international environmental law. Students study specific areas such as forestry law, ocean pollution, public health law, and environmental space law.

The Environmental Earth Sciences track focuses on the physical aspects of environmental science, covering climatology, environmental oceanography, geology, and hydrology. Students study environmental impacts of various processes, including mining, atmospheric pollution, and industrial processes.

Finally, the Environmental Planning and Management specialization prepares students in environmental planning principles, policy frameworks, and management techniques. It includes both urban and rural planning, strategic environmental assessment, and specialized areas such as tourism planning, disaster management, and infrastructure services.

Research Component

The programme emphasizes research, particularly in understanding environmental changes due to anthropogenic activities. It includes the acquisition, processing, and analysis of data, planning of project design and methodology, and exposure to statistical computing packages. The research component takes place during the entire second year of study (Year Two Semester 1 and 2). During this period, all students must undertake a research activity specifically in their chosen area of specialization. This research work culminates in writing a thesis, which carries 6 credit hours (Course Code: SES 899 - Research Project and thesis).

The programme also prepares students for research earlier in the curriculum through several research-focused courses:

Research Methods and field course (SES 802) in the first semester

Each specialization track includes its own specialized research methods course, for example:

Ecological Research Methods for Environmental Biology

Research Methods in Environmental Economics

Research Methods in Environmental Health

Development of Research Proposal in Environmental Earth Sciences

This structured approach ensures students develop both general and specialization-specific research skills before undertaking their thesis project.

Thesis Component in the Curriculum

The thesis must be submitted and examined according to the common regulations for Master's degrees as outlined in the [Postgraduate Rules](#). Students are required to submit their thesis by the end of the second year of study. The thesis is part of the course requirements, which also include a minimum of 80% lecture attendance, seminar participation, direct study, group work, educational visits, and project work. Lecturers are responsible for ensuring course content coverage and timely supervision of the thesis. The thesis must be an original research document submitted in support of candidature for a postgraduate degree or professional qualification, presenting the author's research and findings. A candidate is allowed to proceed to the thesis component only after passing all the required courses.

Graduation Requirements

To graduate, students must complete the thesis under the guidance and supervision of university-appointed supervisors, perform an oral defense, and pass it.