

# Master of Science: Environmental Management and Sustainability

The Master of Science degree in Environmental Management and Sustainability (MSc EMS) prepares graduates to be leaders that drive innovation and commerce forward while positively impacting the well-being and sustainability of our planet and its people.

As a 12-month dual degree, this international master's programme is taught as a collaboration between the University of Malta and James Madison University (Virginia, USA).



*MSc EMS graduates share a holistic understanding of sustainability and the environment and bring a systems-based approach to their work in private companies, government and international agencies, and non-profit organisations.*

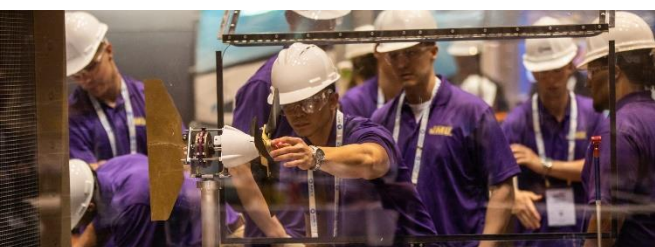


Students spend the autumn semester studying in residence at James Madison University (JMU) in Harrisonburg, Virginia. In the spring, students will be in residence at the University of Malta. In this way, students have a unique opportunity to learn, explore, and gather experiences in two very different geographic, environmental, social and political contexts, with instruction and project supervision provided by both JMU and UM faculty.

Upon completion of the program, graduates will be awarded TWO degrees:

- **MSc in Environmental Management and Sustainability (from UM)** and
- **MS in Integrated Science and Technology (from JMU)**

Elective pathways in the course allow students the opportunity to specialise in one of two areas: Sustainable Technological Systems or Food Systems and Biodiversity. Additionally, students will complete a capstone project on a research topic of their choice, developed in collaboration with programme faculty at both the UM and JMU.



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ta' Malta

MSc EMS Program

<https://www.um.edu.mt/courses/overview/PMSCEMSFTT5-2023-40>

<https://www.jmu.edu/cise/isat/grad/index.shtml>





## COURSE OVERVIEW:

The Master of Science in Environmental Management and Sustainability (MSc EMS) includes a variety of study-units exploring aspects of global sustainability and its impacts on society. Students are also aided in building a suite of transferable analytical skills through grounding in problem-solving, data analysis and mapping tools. The programme is designed to foster innovation and build holistic thinking and problem-solving abilities using systems perspectives on environmental and sustainability challenges. The international and diverse student community also adds value to the learning experience.



## PROGRAMME CURRICULUM:

In addition to core classes taken by all students, spanning theoretical and applied facets of sustainability and problem-solving, students also opt for an elective pathway that allows them to extend this knowledge to specific areas of either *sustainable technological systems* or *food systems and biodiversity*. Elective classes are taken across the year in both the US and Malta, allowing students to develop an in-depth understanding of their selected area of specialisation across environments and cultures.

**Analytical Methods and Techniques in GIS and Data Science** provide access to tools and techniques necessary for understanding patterns in large data sets and training in methods to apply this understanding in meaningful ways that can help define action and shape policy and practice.

**Systems Dynamics** introduces the science of systems as practiced in the field and includes elements of system dynamics and systems modelling.

**Human-Environment Dynamics** focuses on the role humans play within natural, social, and technological systems and how to properly understand and describe their impact on these systems, as well as how science and technology impacts modern society and fits within a cross-cultural world.

**Sustainability, Society, and Change** explores key principles of sustainability and how these apply to both the individual and society at large, also discussing why this concept has taken on global importance in the wake of environmental and human development crises.

**Earth Systems** characterizes the Earth's physical domains and dynamic processes within its biosphere, lithosphere, cryosphere, lithosphere, and atmosphere, focusing in particular on key interactions between these.

**Sustainability Policy and Law** introduces students to the basic principles of international and national environmental law, policy, and regulation as it pertains to sustainability.

**US and Mediterranean Field Study** spans a variety of field classes that provide hands-on location-based experiences and observations relevant to the integrated and applied science practitioner.

**Elective Pathway 1: Sustainable Technological Systems** focuses on improving the sustainability performance of industry through applications of industrial ecology and environmental management systems, as well as by developing a deeper understanding of innovative approaches used to meet societal needs for energy, water and air while managing the need to limit impacts on the natural world and limited resources.

- *Sources, Sinks & Cycles: Energy, Water and Air I & II*
- *Industrial Ecology & Sustainable Industrial Systems I & II*

**Elective Pathway 2: Food Systems and Biodiversity** focuses on the challenges of safeguarding biodiversity and protecting natural habitat while ensuring sustainable food production systems that are able to reliably and effectively provide food security.

- *Biodiversity Conservation I & II*
- *Regenerative Agriculture & Sustainable Food Systems I & II*

## Contacts:

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