

Sustainability Related Academic Programs at Michigan Tech

Updated February 2022. For the most up to date information, visit: www.mtu.edu/majors/

Name	Type of Program	Description	Notes	Delivery Options
Alternative Energy Technology	Interdisciplinary Minor	A growing area of research and development is currently occurring in the area of hydrogen fuel cells, biofuels, and solar cells. Prepares students for careers in energy and related fields.	Must first be enrolled in a bachelor's degree program.	On Campus Online (some courses)
Applied Ecology	MS	Applied Ecology examines and addresses ecological challenges and solutions while working to restore and sustain world biomes. Areas of interest: Conservation Genetics, Mammalian Ecology, Nutrient Cycling, Tree Physiology Ecology.	Must apply and be accepted to Graduate school.	On Campus
Earth Sciences	Minor	This minor affords students a broad education in geology and earth sciences. Learn about the many facets of the natural world.	Must first be enrolled in a bachelor's degree program and file a curriculum change request with the Registrar's Office	On Campus Some courses online.
Ecology	Minor	The College of Forest Resources and Environmental Science, in conjunction with other departments and colleges on campus.	You must already be enrolled in a bachelor's degree program. Next step: file a Curriculum Add/Drop Form with the Registrar's Office to declare your minor.	On Campus Some courses online.
Ecology and Environmental Science Applied	BS	Combine ecological, social, and biotechnological aspects of natural resource conservation and management. Develop skills to protect the integrity of our world's ecosystems and ensure the sustainability of natural resources.	Apply to MTU	On Campus Some courses online.
Ecology and Evolutionary Biology	BS	Observe, collect, record, and analyze evolutionary biological data in the lab and in the field. Study the interactions between organisms and their environment and the evolutionary processes that produce and modify the diversity of life on earth.	Apply to MTU	On Campus Some courses online.
Engineering Sustainability and Resilience	Graduate Certificate	An interdisciplinary approach to graduate education in sustainability and resilience. Learn the origins of, and major advancements in, sustainable development.	For qualified professionals or degree-seeking students. Must have bachelors degree in any engineering field.	Online, On Campus, Accelerated
Environmental and Energy Policy	MS, PhD, Accelerated MS	In as few as five years, you can earn a Bachelor's degree as well as a Master's degree in EEP. With thesis or report degree options, provide students skills and knowledge necessary in solving present and future environmental and energy challenges.	Apply to Graduate school	On Campus
Environmental Engineering	BS, MS, Accelerated MS, PhD	Environmental engineers apply their knowledge of chemistry, biology, math, and physics to protect the environment and human health. They are tasked with developing sustainable solutions for an expanding global community.	BS- Apply to MTU MS- Apply to graduate school	On Campus
Environmental Engineering Science	MS	offers focused study in the application of environmental science to environmental engineering practice. Interest areas: Air Quality, Subsurface Remediation, Surface Water Quality, Water Resources.	Apply to grad school	On-Campus
Environmental Science and Sustainability	BS	Choose one of three tracks to broaden your knowledge and boost your resume: climate science, environmental policy, or geospatial science. Gain a solid footing in the biophysical sciences and take courses that focus on specific environmental topics and challenges.	Apply to MTU	On campus
Environmental Studies	Minor	Minor options: Sustainability Sci. and Society, Law and Society, Historical Studies, Global Studies, Social and Behavioral Studies, American Studies	Must be enrolled in a bachelor's degree program and file a Curriculum Add/Drop Form to inform the Registrar's Office of your interest in the minor.	On campus

Fish Biology	Minor	Focuses on native fisheries and aquatic ecosystems ecology. An Emphasis is placed on species interactions, fish conservation, anthropogenic effects, current and historical fisheries, and data analysis. The impact of local and global issues upon Great Lakes fisheries is also investigated.	A student may minor in any subject, provided the title of the minor differs from the title of the student's major or major concentration. Must first be enrolled in a bachelor's degree program and file a Curriculum Add/Drop Form.	On campus
Forest Ecology and Management	MS	From global climate change to photosynthesis and microbial processes. We specialize in ecology, forest science, genetics and biotechnology, natural resource policy, and wildlife, including the longest-running predator-prey study in the nation on Isle Royale. Areas of interest: Applied Ecology, Avian Ecology, Forest Ecology, Island Ecology.	Must apply to grad. school.	On Campus
Forest Science	PhD	Advanced intensive studies range from forest vegetation dynamics, intensive silviculture, bioinformatics programming, and applied genetics to natural resources policy, coupled with facilities including 4,609 acres of our nationally recognized model research forest. Areas of interest: Conservation Genetics, Hydrology, Invasive Flora and Fauna, Predator-Prey Relationships	Must apply to graduate school	On Campus
Forestry MF (masters?)	MF	Designed to prepare you for a career in forestry, you'll apply emerging technologies such as remote sensing, geographic information systems, and statistical modeling. You'll also explore how business principals factor into forest management situations.		On Campus
Forestry	BS, MS	Learn to develop management plans and options for forested landscapes and implement them to meet society's needs while maintaining ecosystem integrity. Find a career with the US Forest Service, state divisions of forestry, and the forest industry, including forestry and environmental consulting firms.	Apply to MTU	On Campus
Natural Hazards and Disaster Risk Reduction	Certificate (Graduate)	Michigan Tech's on-campus and online Natural Hazards and Disaster Risk Reduction certificate emphasizes the physical and social aspects of natural disasters.	Must have a bachelor's degree in any engineering discipline	On Campus
Natural Resource and Environmental Economics	Certificate (Graduate)	Develop specialized knowledge in the economics of natural resources and the environment, an ability to evaluate resource projects, and a toolkit to perform independent analysis and effectively communicate analytical results with a graduate certificate in Natural Resources and Environmental Economics.	Must have a bachelor's degree.	
Resilient Water Infrastructure	Certificate (Graduate)	The certificate was created to address increasing demand for resilient water infrastructure and professionals trained to address issues caused by rapid climate change and other factors.	Must have a bachelor's degree in civil, environmental or a related degree.	On Camus, Online
Sustainability Science and Society	BS	Study the interactions between social, environmental, and economic systems to understand and find solutions to the world's most significant environmental sustainability problems. Choose to focus on environmental policy, engineering sustainability, sustainability and communities, environment and society, decision making and persuasion, or environmental health and justice.	Apply to MTU	On Campus
Sustainable Biomaterials	Minor		Must be currently enrolled in a bachelor's degree program at Michigan Tech	On Campus
Sustainable Bioproducts	BS	As dependence on fossil fuels diminishes, find yourself at the new frontier of sustainable bioproducts and secure a career in forestry or other industries such as mobility, textiles, energy, furniture, bioplastics, biochemicals, and more.	Apply to MTU	On Campus
Sustainable Pavement Design and Construction	Certificate (Graduate)	Focuses on asphalt and concrete materials, mechanistic-empirical pavement design methods, life cycle assessment, life cycle cost analysis, and sustainability practices in project procurement and construction. Learn to apply International Organization of Standardization (ISO) compliant instruments, such as Environmental Product Declarations (EPD)—used to communicate LCA outcomes and inform public procurement.	Students must have a bachelor's degree in civil or environmental engineering or a related degree.	On Campus

Sustainable Water Resource Systems	Certificate (Graduate)	Gives students an understanding in water resource management from an interdisciplinary perspective that includes policy, natural sciences, and applied sciences. Increasingly, water managers have to work effectively on problem solving that crosses disciplines.	Students must have a bachelor's degree in any engineering discipline.	On campus
Wildlife Ecology and Conservation	BS	Learn how to use Geographic Information Systems (GIS) and be proficient in GPS, land measurement, and remote-sensing skills. Study endangered species prevention and mitigation as well as habitat protection and restoration. Participate in a 14-week field semester in our 4,609 acres of research forest.	Apply to MTU	On Campus