Michigan Tech

Office Memo

Office of the Provost and
Senior Vice President for Academic Affairs

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TO: Richard Koubek, President

FROM: Andrew Storer, Provost & Senior Vice President for Academic Affairs

DATE: November 19, 2025

SUBJECT: Senate Proposal 18-25

Attached is an amended version of Senate proposal 18-25, “Minor in Sustainability Studies,” which address the modifications suggested by the administration in their memo dated June 23, 2025. I have reviewed this editorially amended proposal and recommend approving the editorial amendments.

I concur X do not concur _____ with the provost’s recommendation as stated in this memo.

Richard Koubek, President

November 24, 2025

Date

University Senate

DATE:	November 4, 2025
TO:	Richard Koubek, President
FROM:	Robert Hutchinson, University Senate President
SUBJECT:	Proposal 18-25
COPIES:	Andrew Storer, Provost & Senior VP for Academic Affairs

At its meeting on April 10, 2025, the University Senate approved Proposal 18-25, "Minor in Sustainability Studies." The proposal has been amended based on the administrative response dated June 23, 2025. Feel free to contact me if you have any questions.

The University Senate of Michigan Technological University

Proposal 18-25

Minor in "Sustainability Studies"

Basic Program Information

Primary Contact: Mark Rouleau, Interim Chair for Department of Social Sciences
Program/Degree type: New Minor
Program Title: Minor in Sustainability Studies
Planned Implementation Date: Fall 2025
Program location/modality: on-campus
Target student population: current students

General description and characteristics of the program

The Department of Social Sciences is proposing a new minor in Sustainability Studies for use in the Essential Education program. This minor reflects the goals of the Essential Ed program and aligns with larger Michigan Tech Initiatives. This minor is 18-19 credits, and is being submitted with approval from the Essential Ed Implementation Team.

This minor will be administered by the Department of Social Sciences and advising support may be provided by the advising staff in the department as needed. Future changes to the minor requirements will be reviewed and approved by the Essential Education Steering Committee.

Rationale

This minor theme was selected as a priority area by campus working groups and aligns with Michigan Tech's current initiatives. Sustainability topics are of interest to many students and combine well with many majors across campus. A minor in Sustainability Studies will help students highlight their interest in a visible way and is expected to be attractive to both students and employers.

Related programs: within MTU and at other institutions

There are two majors that are similar to the Sustainability Studies minor at MTU. One is a B.S. in Sustainability Science and Society in the Department of Social Sciences and the other is a B.S. in Environmental Science and Sustainability in the College of Forest Resources and Environmental Science. The current Sustainability Science and Society minor will be shelved.

As Sustainability is inherently an interdisciplinary field, it reflects the nature of the minor that introduces students to social and natural science dimensions of sustainability, in addition to training in communications and intercultural competency. Many higher education institutions have programs in sustainability currently, for example a Sustainability minor offered by the Program in the Environment at the University of Michigan, or a Sustainability minor in the School of Sustainability at Arizona State University. Sustainability academic programming is available at many higher education institutions (too numerous to list here), many with affiliations in the Association for the Advancement of Sustainability in Higher Education (AASHE). The most common names for minors in this field are Sustainability or Sustainability Studies.

Projected Enrollment

The Sustainability Science and Society minor has 17 enrolled students for the fall 2024. It is expected that the new Sustainability Studies minor will be more popular because it will be an Essential Education minor. The Essential Education program estimates about 50 students enrolled in the minor, once the Essential Education program is operating at full capacity. The course lists offer numerous options each semester to allow seats for these students.

Specialized Accreditation Requirements

None required.

Professional Licensure Requirements

None required.

Curriculum Details

Learning Goals

Aligned Essential Ed Goals	Program Learning Outcomes
Think Critically: Evaluate Information	1. An understanding of the core themes, issues, and developments in the social and natural science dimensions of sustainability science, such as the complexities of human-natural systems and environmental decision-making.
Contribute/Transform: Innovate Solutions	2. The use of sustainability science in analyzing interactions among human, environmental, and engineered systems to understand and contribute to real-world solutions.
Communicate: Communicate Contextually	3. Communicate effectively (orally and in writing) about issues related to environmental science at local, regional, and global

Aligned Essential Ed Goals	Program Learning Outcomes
	scales with diverse populations, working towards environmental justice.

Assessment Plan

This minor will be assessed through the ePortfolio submissions. Students will be specifically asked to reflect on the learning goals for the minor.

Curriculum Design

Total Credits: 18-19

Course	Credits	Semesters offered	Pre-reqs
List 1 Sustainability and Communication [Communication Intensive]: 3 cr. Choose one of the following:			
HU 3519 Workshop in Nature Writing	3	Fall, in odd years	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
HU 3825 Environmental Communication	3	Fall	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
HU 4625 Risk Communication	3	On demand	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
HU3693 Science Writing	3	Spring, in even years	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
HU3130 Rhetoric of Science and Technology	3	Fall	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
HU3120 Technical and Professional Communication Prereqs	3	Fall, Spring, Summer	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
HU 3692 Writing for Scientific Audiences	3	On demand	UN 1015, Cannot be freshman

Course	Credits	Semesters offered	Pre-reqs
HU 3694 Grant Writing	3	Fall in even years	UN 1015 and (UN 1025)
List 2 Cultural and Justice Issues in Sustainability [Intercultural Competency]: 3 cr			
SS 3105 Native American and Indigenous Communities	3	On demand	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3225 Capitalism and the Modern World	3	Spring, in even years	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3811 Energy Security and Justice	3	Fall, odd years	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3805 Environmental Justice	3	Spring, odd years	UN1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 4450 Sustainable Tourism and Planning	3	Fall, even years	(SS 2450 or SS 2100 or SS 2400 or SS 2700) and UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
HU 3855 Power, Activism, and Technology	3	Fall	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
FW 4111 Indigenous Natural Resource Management	3	Spring	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3110 Food Systems and Sustainability	3	Fall	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3750 Social Inequality	3	Fall, in odd years, Spring, in odd years	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)

Course	Credits	Semesters offered	Pre-reqs
HU 3508 Literature and the Environment	3	Fall, in odd years	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
HU 3710 Engineering Ethics	3	Spring	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
List 3 Social Sciences Core Courses [SHAPE Courses]: 6 cr			
3A: Lower-level courses (0-6 cr)			
BL 2001 - Valuing the Great Lakes	3	Fall, summer	none
SS 2210 Community Development & Planning	3	Spring, in odd years	none
SS 2300 Environment & Society	3	Fall, spring	none
SS 2400 Introduction to Human Geography	3	Fall	none
SS 2450 Introduction to Sustainable Tourism	3	Fall, in even years, Spring, in even years	none
3B: Upper-level courses (0-6 cr)			
EC 4640 Natural Resource Economics	3	Fall	(EC 2001 or EC 3002 or FW 4080) and UN 1015 and (UN 1025)
SS 3110 Food Systems & Sustainability	3	Fall	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3105 Native American and Indigenous Communities	3	On demand	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3315 Population & Environment	3	Fall, in odd years	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)

Course	Credits	Semesters offered	Pre-reqs
SS 3520 U.S. Environmental History	3	Fall	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3630 Environmental Policy & Politics	3	Spring	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3801 Science, Technology, & Society	3	Fall	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3805 Environmental Justice	3	Spring, in odd years	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3811 Energy Security and Justice	3	Fall, in odd years	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3815 Energy & Society	3	Summer, in odd years	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 4120 Sustainable Development & Communities	3	Fall	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 4200 Environmental Anthropology	3	Fall	SS 2100 and UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 4313 Sustainability Science	3	Fall	none
SS 4390 Seminar in Sustainability	3	On demand	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 4400 Environmental Sociology	3	On demand	SS 2700 or SS 2400
SS 4450 Sustainable Tourism and Planning	3	Fall, in even years	(SS2450 or SS2100 or SS2400 or SS2700) and UN1015 and (UN 1025 or Modern

Course	Credits	Semesters offered	Pre-reqs
			Language - 3000 level or higher)
SS 4540 Global Environmental History	3	Fall, in odd years	SS3520
EC 4640 Natural Resources Economics (3) Prereqs:	3	Fall	(EC2001 or EC2002 or EC2003 or FW4080) and (UN1015 and and (UN 1025 or Modern Language - 3000 level or higher))
EC 4650 Market Failure & Environment	3	Fall, in odd years	(EC2001 or EC3002) and (UN1015 and and (UN 1025 or Modern Language - 3000 level or higher))
PSY 3800 - Environmental Psych	3	Spring, in even years	(PSY 2000 or HF 2000) and UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
HU 3508 - Literature and the Environment	3	Fall, in odd years	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
FW 3313 Sustainability Science	3	Fall, Spring	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
List 4 Natural Sciences Core Course [Unrestricted Courses]: 3 cr - *this list can include any class (not limited to the Essential Ed lists), but there must be some options in each semester (Fall/Spring) that are open to all students (not limited to specific majors and with accessible prereqs, i.e., courses that are included as part of Essential Ed or within this minor).*			
BL 1100 General Biology I (BL1110 lab optional)	3-4	Fall, Summer	None
BL 1400 Principles of Biology (BL 1410 lab optional)	3-4	Fall	None

Course	Credits	Semesters offered	Pre-reqs
BL 2160 Botany	4	Spring	None
BL 2940 Human Nutrition	3	Spring, summer	None
BL 3490 Principles of Ecology & Evolution (includes required lab)	4	Fall	(BL 1100 and BL 1110) or (BL 1400 and BL 1410)
BL 4070 Environmental Toxicology	3	Spring	BL 1020 or (BL 1200 and BL 1210) or BL 1040 or (BL 1400 and BL 1410) and CH 1150 and CH 1160
BL 4120 Environmental Remediation	3	Fall, odd years	(BL 1200 and BL 1210) or (BL 1400 and BL 1410)
BL 4421 Lake Superior Exploration	3	Summer, odd years	None; restricted to juniors and higher
BL 4447 Stream Ecology	3	Summer, even years	None; restricted to sophomores and higher
BL 4450 Limnology	3	Spring, even years	None; restricted to sophomores and higher
BL 4461 Ecosystem Ecology	3	On demand	BL 3490 and CH 1122 or (CH 1160 and CH 1161)
BL 4465 Biological Oceanography	3	Spring	(BL 1100 and BL 1110) or (BL 1400 and BL 1410)
ENG 4515 Introduction to Sustainability and Resilience	3	fall	Cannot be freshman or sophomore
ENG 4525 Systems Analysis for Sustainability and Resilience	3	Spring	Cannot be freshman or sophomore

Course	Credits	Semesters offered	Pre-reqs
FW 2060 Fundamentals of Environmental Sustainability	3	Fall	None
FW 2030 Conservation of Nature	2	Fall	None
FW 2081 - Intro to Circular Economy	3	Spring	None
FW 2010 Vegetation of North America	4	Fall	Must be enrolled in one of the following College(s): College of For Res & Env Sci
FW 2015 Landscape Vegetation	2	Fall, Summer	FW 2010
FW 3020 Forest Ecology	3	Fall	FW 2051(C)
FW 3111 Wild Foods: Northern Forests	2	Summer, in even years	None
FW 3112 Human Dimensions of Conservation	3	Spring	FW 1050
FW 3540 Introduction to Geographic Information Systems for Natural Resource Management	4	Spring	MA 2710(C) or MA 2720(C) or MA 3710(C) or ENVE 3502 or CEE 3502(C)
FW 4380 Landscape Ecology and Planning	3	Spring	MA 2720 or CEE 3502
FW 4400 Urban Forestry	3	Spring	None
FW 4421 Climate Change and Forested Systems	3	Spring	May not be enrolled in one of the following Class(es): Freshman
FW 3117 Forest of the Future: Swedish Study Abroad	3	Summer, odd years	Permission of Instructor Required; Co-Requisite: FW 3114

Course	Credits	Semesters offered	Pre-reqs
FW 3110 - Natural Resource Policy	3	Spring, Summer	None
FW 3410 - Conservation Science	3	Spring	None
FW 4180 - Ethics of Conservation and Sustainability	2	Fall	None
FW 3610 - Ornithology	4	Spring	BL 1040 or BL 1020 or (BL 1200 and BL 1210) or (BL 1400 and BL 1410)
FW 4240 - Mammalogy	4	Fall	BL 1020 or BL 1040 or (BL 1200 and BL 1210) or (BL 1400 and BL 1410)
FW 4620 - Herpetology	3	Spring, in even years	BL 1040 or BL 1020 or (BL 1200 and BL 1210) or (BL 1400 and BL 1410)
GE 2000 - Understanding the Earth	3	Fall, Spring	None
GE 2100 - Environmental Geology	3	Spring	None
MEEM 4685 Environmentally Responsible Design and Manufacturing	3	Spring in odd years	Seniors only
List 5A Sustainability Experience **Take an Essential Ed Experience from the list below (3 cr)**			
SS 4530 Deindustrialization and The Urban Environment	3	On demand	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 4700 Communities & Research	3	Fall	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)

Course	Credits	Semesters offered	Pre-reqs
HU 3703 HU Experience in Environmental Philosophy	3	On demand	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
HU 4041 HU Experience in Communication for Sustainability	3	Fall, in odd years	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
FW 3760 Human Dimensions of Natural Resource Stewardship	3	Fall	UN 1015 and (UN 1025 or Modern Language - 3000 level or higher)
SS 3913 Sustainable Living Practicum	1-2 cr., repeatable	Fall, Spring	Permission of instructor required
FW 3114 Reading the Forest	3	Summer (Sweden study abroad)	Permission of instructor
OR **5B ePortfolio submission (1 cr) AND Upper Division SHAPE Course (3 cr)**			
UN 3023- Advanced Portfolio for Essential Ed	1	all	No Freshmen
AND one course from the list below			
Any course from list 3B	3	*Multiple*	*varies*

New Course Descriptions

No new courses are required to launch this minor.

Model Schedule

The sample schedule below shows a sequence where the minor courses are completed in years 2 and 3, which is a recommended practice.

Semester	Year 1	Year 2	Year 3	Year 4
Fall		[List 1 / Comm. Int.]	[List 2/ Intercultural Comp.]	

		[List 3A / SHAPE]	[List 3 B) / SHAPE]	
Spring		[List 4 / Unrestricted Minor Course]	[List 5A / E3] **OR** 5B UN 3023 (Portfolio) + Upper Level SHAPE	
Totals		9 credits	9-10 credits	

Faculty Qualifications

Courses will be taught by faculty determined to be qualified by their respective home units. Faculty qualifications will be available upon request.

Resources Needed

Library and other learning resources needed

No new library resources are needed to support this minor.

Suitability of existing space, facilities, and equipment

Current spaces and facilities are sufficient.

Program Costs

No additional costs anticipated.