The University Senate of Michigan Technological University
Proposal 24-25

"Minor in AI Ethics"

Basic Program Information

Primary Contact: Scott Marratto (smarratt@mtu.edu)
Program/Degree type: Minor
Program Title: Minor in AI Ethics
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 Humanities is proposing a new minor program in AI Ethics for use in the Essential Education program. This minor is designed to introduce students to basic issues in AI ethics and in the social and cultural dimensions of AI. This minor is 18 or 19 credits, is designed to meet the requirements of the Essential Education program, and is being submitted with approval from the Essential Ed Implementation Team.

This new minor will be administered by the Department of Humanities and will be advised by the Humanities undergraduate advisor. 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. With the recent growth in enrollments in the College of Computing, and with increasing awareness of the potential, and novel, impacts of AI in every sphere of social and professional life, we expect robust interest in this program. Its interdisciplinary nature makes it uniquely well-suited to serve as an Essential Education Minor. Themes in an AI ethics curriculum typically include: transparency; explainability; accountability and regulatory oversight; potential adverse biases and effects of the use of AI; fairness and inclusivity; impacts of AI on work and employment; environmental impacts, etc.. Broader

interdisciplinary themes also relevant to an AI Ethics minor include: law and policy concerning privacy and intellectual property; social impacts of technology (privacy, work, employment, etc); trust and accountability in digital media; ethics and human centered design; prompt engineering; writing with AI. Courses within the minor will touch on a broad range of themes connecting computing, ethics, social sciences, media studies, and data science.

Related programs: within MTU and at other institutions

The only clearly connected program currently at Michigan Tech is the Minor in Ethics and Philosophy. In Michigan, there is a minor in STEM ethics at Grand Valley State University that focuses broadly on issues in ethics of technology but does not have a particular focus on computing or AI. This is also the case with a program in professional and applied ethics at Western Michigan University. At the national level, there are some programs that provide good comparisons:

- Ethics and AI Minor – George Mason University
- Minor in Responsible AI – Santa Clara University
- Information Ethics, Minor – Northeastern University
- Minor in Applications of Artificial Intelligence and Machine Learning – Georgia Tech

An essential education minor in AI ethics would be unique in the state of Michigan, reflecting both the character of our essential ed curriculum and Michigan Tech's position as the state's flagship technological university.

Projected Enrollment

We anticipate enrollment of approximately 50 students in this minor.

Specialized Accreditation Requirements

None required.

Professional Licensure Requirements

None required.

Curriculum Details

Learning Goals

Aligned Essential Ed Goals (Optional)	Program Learning Outcomes
Think Critically: Analyze Ethical Implications	Students will develop and demonstrate the critical reflexivity necessary to investigate and evaluate the moral permissibility or desirability of various developments and applications of AI and related technologies.

Assessment Plan

This minor will be assessed through the ePortfolio submissions. Students will be specifically asked to reflect on the learning goal(s) for the minor.

Curriculum Design

Total Credits: 18 (or 19 if not using E3 course)

Course	Credits	Semesters offered	Pre-reqs
List 1- Technology and Communication [Communication Intensive]: 3 cr			
HU3120 Technical and Professional Communication	3cr	Fall, Spring, Summer	None
HU3845 Human Machine Communication	3cr	Fall	None
HU 3130 Rhetoric of Science and Technology	3 cr	Fall	None
SS 3535 History of Privacy	3 cr	Fall	UN 1015
HU 3693 Science Writing for Public Audiences	3cr/	Spring - Even	None

SS 4040 Civic Communications	3 cr	Spring	SS 2001
SS4550 History of Technology	3 cr	Spring - Odd	SS 2500 or SS 2501 or SS 2502 or SS 2503 or SS 3510 or SS 3580
List 2 - Ethics in Social Contexts [Intercultural Competency]: 3 cr			
HU 3135 Power and Bias in Technology Design	3 cr	Demand	
HU 3710 Engineering Ethics	3 cr	Spring	UN 1015
HU 3800 Media and Society	3 cr	Spring	UN 1015
HU 3850 Automated Culture: Critical Approaches to AI	3 cr	Demand	UN 1015
HU 3855 Power, Activism and Technology	3 cr	Fall	None
HU 3871 Media Theory	3 cr	Fall, Spring	UN 1015
SS 3640 CyberLaw	3 cr	Spring Odd	No Freshman
List 3 a) Social Dimensions of Technology [SHAPE]: 3 cr			
CS3000 Ethical & Social Aspects of Computing	3 cr	Fall/Spring	CS 3141
PSY4750 Judgement and Decision Making	3cr	Spring	

SS 3535 History of Privacy	3 cr	Fall	UN 1015
SS 3580 Technology and Society	3 cr	Fall	None
SS3640 CyberLaw	3 cr	Spring Odd	No Freshman
SS 3801 Science Technology and Society	3 cr	Fall	None
SS 3815 Energy and Society	3 cr	Summer (Odd)	None
List 3 b) Ethics and Technology [SHAPE]: At least 3 cr			
HU 3701 Philosophy of Technology	3 cr	Spring	None
HU 3704 Ethics of AI	3 cr	Fall, Spring	None
HU3705 Media and Communication Ethics	3 cr	Fall	
List 4 Supporting Courses [Unrestricted Courses]: 3 cr			
Any course from list 3a	3 cr	multi	NA
CS 4001 National Cybersecurity Policy and Law	3cr	Fall	Must be Senior status
ACC 4000 Accounting Data Analytics	3cr	Fall	ACC 2000 and ACC 3000
SAT 1700 CyberEthics	3cr	Fall	None

SAT 4114 Artificial Intelligence in Healthcare	3 cr	Spring	SAT 4650
MIS 4000 AI and Emerging Technologies for Business	3cr	Fall	MIS 2100 or CS1122 or CS1131
In-Depth Experience **EITHER List 5a (3 cr) OR List 5b (4 cr)**			
List 5a [Essential Ed Experience] = 3 cr			
HU3810 Technology and Critical Making	3 cr	Spring	UN 1015
PSY 4080* Digital Tutor Training	3cr	Fall, Spring	
OR **List 5 b [ePortfolio 1cr + Upper Division SHAPE Course 3cr] total= 4 cr (not previously taken)**			
UN3023 Adv Portfolio for Essential Ed	1 cr	all	None
Any course from lists 1, 2, 3a, or 3b	3 cr	Multi	

*PSY 4080 is a special topics course listed as SHAPE. This specific topic is being piloted and will count as an Experience for any Essential Ed students who take it during the pilot phase. If the course continues, it will get a new course number.

New Course Descriptions

HU3704 Ethics of AI: An introduction to the philosophical issues raised by current and future AI systems with a special focus on ethical foundations and general normative concerns. Including AI prediction, classification, manipulation, surveillance; AI agency, responsibility, moral status; the future of work; human rights; use of AI in governance, health, education etc

HU 3810 Technology and Critical Making: Considers interrelationships between technology and culture. Includes understanding the context within which technologies are developed and used, and how assumptions about technology shape knowledge, practice, and creative action. Issues such as progress, determinism, ethics, gender, race, class, globalization, and "humanness".

PSY4080 Digital Skills Tutor Training: In this experiential course, students learn about the social, psychological, and physical barriers that individuals may face as they engage with the digital world. They practice proven tutoring techniques that enhance learners' confidence and competence. They then put these techniques to use, working one on one as tutors with community members to help them overcome digital barriers.

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 Technology and Communication / Comm. Int.] HU3120 Technical and Prof Comm or HU3845 Human Machine Comm	[List 2 Ethics in Social Context/ Intercultural Comp.] HU3710 Technology & Culture or HU3855 Power Activism and Technology	
		[List 3 Social Dimensions of Technology / SHAPE] SS3801 Science Tech & Society, or SS3580 Tech and Society	[List 3 b) Ethics and Technology / SHAPE] HU 3704 Ethics of AI or HU 3701 Philosophy of Technology	
Spring		[List 4 / Unrestricted Minor Course] HU 2301 Intro to Rhetoric, or SS 3640 Cyberlaw, or other	[List 5 / E3 / Upper-level SHAPE] Exp: PSY 4080 (Digital Skills Tutor Training) or HU3810 Technology and Critical Making	
			OR ePortfolio submission + HU 3701 Philosophy of Technology and UN 3023 (Portfolio)	

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.