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: April 17, 2026

SUBJECT: Senate Proposal 35-26

Attached is Senate proposal 35-26, “Minor in Artificial Intelligence,” and a memo stating the Senate passed this proposal at their April 16, 2026 meeting. I have reviewed this memo and recommend approving the proposal.

If you concur with my recommendation, the provost’s office will notify the appropriate offices as no further approvals are needed.

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

Richard J. Koubek Digitally signed by Richard J. Koubek
Date: 2026.04.20 10:40:11 -04'00'

Richard Koubek, President

Date

University Senate

Michigan Tech

DATE:	April 16, 2026
TO:	Richard Koubek, President
FROM:	Robert Hutchinson, University Senate President
SUBJECT:	Proposal 35-26
COPIES:	Andrew Storer, Provost & Senior VP for Academic Affairs

At its meeting on April 16, 2026, the University Senate approved Proposal 35-26, "Minor in Artificial Intelligence." Feel free to contact me if you have any questions.

The University Senate of Michigan Technological University
Proposal 35-26
(Voting Units: Academic)

Minor in Artificial Intelligence

Basic Program Information

Primary Contact: Zhenlin Wang, Chair, Computer Science;
Laura Brown, Associate Dean of Data Science Initiatives, College of Computing;
Yu Cai, Associate Dean, College of Computing
Program / Degree type: Minor
Program Title: Minor in Artificial Intelligence
Planned Implementation Date: Fall 2026
Program location / modality: Face to face
Target student Population: Existing students
Restrictions: Students in the BS in Artificial Intelligence are not eligible to earn this minor.

General description and characteristics of program

The proposed Minor in Artificial Intelligence (AI) emphasizes the technical foundations of artificial intelligence, ethical and social impacts, and its real-world applications. The AI workforce is expanding rapidly across sectors including computing, healthcare, manufacturing, finance, and national security. Employers increasingly seek graduates who possess deep expertise in their primary discipline while also having hands-on experience with AI tools and methodologies. As a result, AI competency has become an essential skill for today's college graduates. This minor will provide Michigan Tech students with an opportunity to gain strong AI skills.

This program focuses on both the theoretical foundations of machine learning and artificial intelligence and their applications across multiple disciplines. Michigan Tech's strong existing degree programs in Computer Science (CS) and Data Science (DS) provide a solid foundation for this minor. Most core courses are drawn directly from these programs, while the application-oriented courses are mostly contributed by other academic units.

Rationale

AI has become a driving force for innovation across industries, and the demand for AI skills is growing rapidly across nearly all disciplines. According to the 2025 *Future of Jobs Report* by the World Economic Forum, AI and big data analysis are projected to be among the most sought-after technical skills by employers by 2030. This minor is designed to meet these evolving

industry needs by preparing a workforce with AI skills. The program will help shape Michigan Tech as a national leader in AI education.

Related programs: within MTU and at other institutions

Related Programs within MTU:
The closest related major programs are the following:

- BS in Data Science
- BS in Computer Science
- BS in Software Engineering
- BS in Mathematics and Computer Science
- BS in Statistics
- BS in Business Analytics
- BS in Environmental Data Science

The closest related minors are:

- Minor in AI Ethics (*currently under Michigan Tech Senate review*)
- Minor in Business IT solutions
- Minor in Statistics

Related Programs in the Region:
Several other institutions have recently developed (or are developing programs) minors related to AI. Below are a few examples from Michigan Universities.

- Oakland University - Minor in Artificial Intelligence
  https://catalog.oakland.edu/preview_program.php?catoid=68&poid=15027
- University of Michigan - Minor in Artificial Intelligence
  https://cse.engin.umich.edu/academics/undergraduate/majors-and-minors/artificial-intelligence-minor/
- Grand Valley State University - Minor in Artificial Intelligence
  https://www.gvsu.edu/computing/artificial-intelligence-minor-243
- Kettering University - Minor in Artificial Intelligence
  https://catalog.kettering.edu/undergrad/academic-programs/minors/AI/

National Programs
There has been growth in the number of MS and now BS degree programs in Artificial Intelligence nationwide. Several examples include:

- Georgia Tech - Minor in Applications of Artificial Intelligence and Machine Learning
  https://catalog.gatech.edu/programs/minor-artificial-intelligence-machine-learning/
- Purdue University - Minor in Artificial Intelligence/Machine Learning
  https://catalog.purdue.edu/preview_program.php?catoid=18&poid=33415
- Illinois Institute of Technology - Minor in Artificial Intelligence
  https://www.iit.edu/academics/programs/artificial-intelligence-minor
- Carnegie Mellon University - Minor in Artificial Intelligence
  https://www.cs.cmu.edu/bs-in-artificial-intelligence/minor
- University of Texas - San Antonio - Certificate in Artificial Intelligence
  https://future.utsa.edu/programs/undergraduate-minor/artificial-intelligence/

- Missouri Science & Technology - Minor in Artificial Intelligence and Machine Learning in Business
  https://catalog.mst.edu/undergraduate/degreeprogramsandcourses/informationscienceandtechnology/#minortext
- Clemson University - Minor in Artificial Intelligence
  https://catalog.clemson.edu/preview_program.php?catoid=43&poid=11998

Projected Enrollment

Initial enrollment is expected to be 30 students with enrollment growing to 200 students in a couple of years. There are currently 37 minors in Computer Science, which provides a baseline for projection. However, we expect the minor in AI will draw much broader interest.

Specialized Accreditation Requirements

None required.

Professional Licensure Requirements

Not applicable

Curriculum Details

Learning Goals

Upon successful completion of the degree, students will be able to:

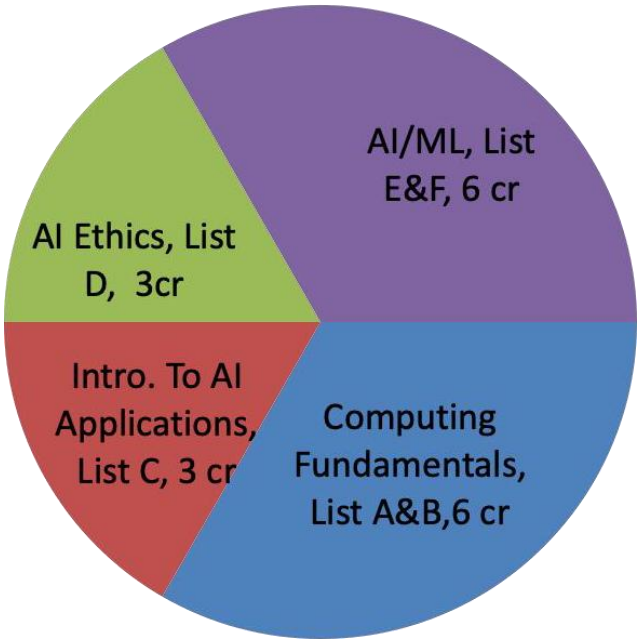
1. Design, implement, and evaluate an AI-focused solution to meet a given set of requirements.
2. Recognize professional responsibilities and make informed judgments in AI practice based on legal and ethical principles.

Assessment Plan

An assessment plan for the university will be developed, following the model established for other computing BS degrees and minors in the College of Computing. The majority of assessment activities will be conducted through courses offered in computer science and data science as a part of ABET accreditation.

Curriculum Design

The minor would consist of a minimum of 18 credits. The pie chart below illustrates the topic/credit distribution with the detailed course list following.



List A: Computing Fundamentals I (complete one of the options below)

- DATA 1200 - Data Science with Python, 3 cr, Spring
  Pre-reqs: MA 1030(C) or MA 1031(C) or MA 1032(C) or MA 1160(C) or MA 1161(C)
  Note: If students select DATA 1200, they will need to complete at least one of the other CS courses in this list to progress.
- CS 1122 - Introduction to Programming II, 3 cr, Fall, Spring, Summer
  Pre-reqs: CS 1121
- CS 1131 - Accelerated Introduction to Programming, 5 cr, Fall
  Pre-reqs: MA 1031(C) or MA 1032(C) or MA 1120(C) or MA 1160(C) or MA 1161(C) or MA 1121(C)

List B: Computing Fundamental II (complete one of the options below)

- CS 2321 - Data Structures, 3 cr, Fall, Spring, Summer
  Pre-reqs: CS 1122 or CS 1131
- DATA 2201 - Foundations of Data Science, 3 cr, Fall
  Pre-reqs: {[(DATA 1202 or DATA 1200) and (CS 1122 or CS 1131)] or (CS 2311 and CS 2321)} and (MA 2320(C) or MA 2330(C) or MA 2321(C))

List C: Introduction to AI Applications and Tools (complete one of the options below)

- **CS 2800 - Introduction to AI Applications (proposed in BS in AI)**, 3 cr, TBD
  Pre-reqs: (CS 1121 and CS1122) or CS 1131 or DATA 1200
- SAT 3903 - AI Tools and Applications, 3 cr., Spring
  College of Computing major

List D: AI Ethics (complete one of the options below)

- CS 3000 - Ethical and Social Aspects of Computing, 3 cr., Fall, Spring
  Pre-reqs: CS 3141
- HU 3704 - Ethics of Artificial Intelligence, 3 cr., Fall, Spring
  Pre-reqs: none

List E: AI and Machine Learning I (complete one of the options below)

- CS 4861 - Artificial Intelligence, 3 cr. Spring
  Pre-reqs: CS 2311 and CS 2321 and MA 3720
- CS 4801 - Foundations of Machine Learning, 3 cr., Fall
  Pre-reqs: DATA 2201 and (MA 2710 or MA 2720 or MA 3710 or MA 3720)

List F: AI and Machine Learning II (complete one of the options below)

- Other option from List E
- CS 3461 - Introduction to Robotics, 3 cr., Spring
  Pre-reqs: CS 3421 or EE 3172
  OR
  EET 3144 - Introduction to Industrial Robotics, 3 cr., Fall, Summer
  Pre-reqs: none
  OR
  EE 4235 - Sensing and Processing in Robotics Applications, 3 cr., Fall
  Pre-reqs: EE 2180 and (ENG 1101 or ENG 1101T)
- CS 4761 - Human Robot Interaction
- SAT 4520 - Machine Learning in Security, 3 cr., Spring
  Pre-reqs: SAT 3812 and SAT 4310
- SAT 4114 - Artificial Intelligence in Healthcare, 3 cr., Spring
  Pre-reqs: SAT 4650
- EET 4501 - Applied Machine Learning, 3 cr., Fall
  Pre-reqs: SAT 4310 or SAT 4650 or CS 1121
  OR
  MIS 4000 - AI and Emerging Technologies for Business, 3 cr., Fall
  Pre-reqs: MIS 2100 or CS 1122 or CS 1131
  OR
  EE 4615 - AI Engineering Applications, 3 cr., Spring
  Pre-reqs: EE 3180

Model Schedule

Year 1	
Fall List A	Spring List A (if not in Fall)

Year 2	
Fall List B	Spring List C
Year 3	
Fall List D, List E or List F	Spring List E or List F
Year 4	
Fall List E or List F	Spring List E or List F

New Course Descriptions

The minor in AI will require one new course that also was proposed in the BS in AI (CS 2800 Introduction to AI Applications).

CS 2800 Introduction to AI Applications
Prereq: (CS 1121 and CS1122) or CS 1131 or DATA 1200
The course provides an introduction to students about AI and modern AI tools. The course will also introduce different machine learning models, how models are trained and used, with students able to use pre-trained models.

CS 4761 Human Robot Interaction
This course does not currently exist; however, it will be dual-listed with CS5761, which does exist, in the next curriculum update.

Faculty Qualifications

Courses will be taught by faculty determined to be qualified by their respective home units and other university review, where appropriate. Faculty qualifications will be available upon request.

Program-specific policies, regulations, and rules

The program follows the university policies and there are no specific policies, regulations and rules.

Resources Needed

Library and other learning resources

No additional library or learning resources are needed initially.

Suitability of existing space, facilities, and equipment

Current facilities are sufficient to start this program. The CS Department and the College of Computing plan to utilize the existing Rekhi labs, AC virtual cluster, and/or cloud resources to initially meet the needs of AI/ML courses.

Program Costs

The Department of Computer Science can absorb the teaching needs of the program for the related CS courses. Depending on enrollment, additional teaching and computing resources may be needed.