Michigan Technological University Bachelor of Science Degree Audit
Major Program: Data Science
Program Code: IDS, Academic Year 2025-2026
Minimum credits required for the degree: 120

Core Requirements: 53 to 57 credits

- CS 1121 (3) and CS 1122 (3)
  - or CS 1131 (5)
- CS 2311 (3) or MA 3210 (3)
- CS 2321 (3)
- CS 3425 (3) or SAT 3210 (3)
- CS 4321 (3)
- CS 4801 (3)
- CS 4770 (3)
- MA 1160 (4) or MA 1161 (5)
- MA 2320 (2) or MA 2321 (2) or MA 2330 (3)
- MA 2710 (3) or MA 2720 (4) or MA 3710 (3)
- Select two of the following:
  MA 3720 (3) or MA 3740 (3) or MA 4710 (3) or MA 4790 (3)
- DATA 1000 (1)
- DATA 1100 (1)
- DATA 1200 (3)
- DATA 2201 (3)
- DATA 4891 (3)
- HU 2645 (3) or MIS 3500 (3) or DATA 2600 (3)
- CS 3000 (3) or SAT 1700 (3) or DATA 3000 (3)

Data Science Electives: 12 credits

Up to 6 credits in Data Science Electives can be 2000-3000 level

Select one course from a list of Machine Learning/AI related topics:

- CS 4811 (3)
- CS 4821 (3) or CS 5831 (3)
- CS 5811 (3)
- CS 5821 (3)
- CS 5841 (3)
- EET 4501 (3)

Select three remaining courses from below or any course above not already used:

*CS 3141, CS 4001, CS 4471, CS 4760, MA 2600, MA 3740, MA 4330, MA 4710, MA 4720, MA 4760, MA 4770, MA 4780/5780, MA 4790/5790, SAT 2711, SAT 3310, **SAT 3812, SAT 4144, SAT 4283, SAT 5165, MIS 4000, MIS 4400

*For students completing the Software Engineering Focus Area, one of the above data science elective courses must be: CS 3141

**For students completing the Cybersecurity Focus Area, one of the above data science elective courses must be: SAT 3812

Focus Area: 15 credits
Choose a focus area below to complete

Software Engineering*

- CS 1142 (3)

Choose 12 credits:

- CS 3311 (3)
- CS 3712 (3)
- CS 4710 (3)
- CS 4711 (3)
- CS 4760 (3)

Cybersecurity**

- CS 1111 (3) or CS 1142 (3) or MIS 2100 (3)

Select two or more:

- CS 4471 (3)
- EE 4723 (3)
- MA 3203 (3)
- SAT 4812 (3)

Select one course if needed:

- CS 3712 (3)
- CS 4471 (3)
- CS 4710 (3)
- MIS 4200 (3)
- SAT 2711 (3)
- SAT 3310 (3)

Design your own Focus Area
Students can make a plan with their advisor and program director for a selection of 5 courses in their technical focus area, e.g., forestry, biology financial technology, physics, chemistry, engineering, etc.

Statistics

- MA 3720 (3)
- MA 3740 (3)

Select at least three:

- MA 4710 (3)
- MA 4720 (3)
- MA 4730 (3)
- MA 4760 (3)
- MA 4770 (3)
- MA 4780 (3)
- MA 4790 (3)

MA 3720, MA 3740, MA 4710, and MA 4790 may be used to meet core requirements; an additional course(s) must be selected from the groups below to complete 15 unique credits.

Business Technology

- MIS 2000 (3)
- MIS 3100 (3)
- MIS 3200 (3)

Select two courses from one area:

Usability and Human Factors in IT Design
MIS 2200, MIS 3500, HU 2642, HU 3120, HU 4628, HF 3850, HF 4015

Systems Thinking for Design
MIS 3500, MIS 4000

Data and IT
MIS 4400, MIS 4000, MA 2330, MA 3740

Essential Education requirements

- Students must complete three main components of Essential Education (First-Year Experience, Distribution or Minor Pathway, and Activities for Well-being and Success) with the credit distributions as shown below. A minimum of 37 credits is required to complete these requirements.
- Up to five Essential Education requirements and the Michigan Tech Seminar may be shared (double-counted) with major requirements. Work with your advisor to determine which major requirements may satisfy Essential Education requirements.
- Some courses are on more than one list, but each course can satisfy only one Essential Education requirement.
- Students may choose between an Essential Education minor or the Distribution Pathway. The list of Essential Education minors can be found here.
- Lists of courses for each requirement can be found on the Essential Education page.

First-Year Experience (16 credits)

- Michigan Tech Seminar (1)
- Math (3)
- Natural and Physical Science (3)
- STEM (3)
- Composition (3)
- Foundations of the Human World (3)

Distribution Pathway (18 credits)

- Communication Intensive (3)
- Intercultural Competency (3)
- Arts and Culture (3)
- STEM (3)
- SHAPE (3)
- Essential Education Experience (3)

Activities for Well-being and Success (3 credits)

Free Electives

- Any coursework is allowable, excluding coursework below the 1000-level.
- The number of free elective credits required is dependent on how many additional credits are required beyond Major requirements and Essential Education requirements to reach the total credits required for the degree as indicated on the audit.

Additional Graduation Requirements

- Satisfy the 2.0 departmental and cumulative Grade Point Average
- Earn 30 upper-level credits at Michigan Tech
- Apply for Graduation