

Michigan Technological University Bachelor of Science Degree Audit

Major Program: Data Science

Program Code: IDS, Academic Year 2026-2027

Total credits required for the degree: 120

Core Requirements: 55 to 59 credits

- CS 1121 (3) and CS 1122 (3)
 - or CS 1131 (5)
- CS 2311 (3) or MA 3210 (3)
- CS 2321 (3)
- CS 3000 (3) or SAT 1700 (3) or DATA 3000 (3)
- CS 3425 (3) or SAT 3210 (3)
- CS 4321 (3)
- CS 4770 (3) or DATA 3401 (3)
- CS 4801 (3) or DATA 3801 (3)
- DATA 1000 (1)
- DATA 1100 (1)
- DATA 1200 (3)
- DATA 2201 (3)
- DATA 4991 (3)
- HU 2645 (3) or MIS 3500 (3) or DATA 2600 (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), MA 3740 (3), *MA 4710 (3),
or *MA 4790 (3)
**Students completing the Statistics Focus Area will need to take MA 4710 and MA 4790.*

Data Science Electives: 9 to 12 credits

Machine Learning/AI related topics: select one course

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

Additional Electives: 6 to 9 credits

Select two to three remaining courses from below or any course above not already used; one course needs to be 4000+ level.

Cybersecurity Focus Area: select two

Software Engineering Focus Area: select two

All other Focus Areas: select three

****CS 3141, CS 4001/5001, CS 4471, CS 4760, MA 2160, MA 2600, MA 3160, MA 3740, MA 4330, MA 4710, MA 4720, MA 4760, MA 4770, MA 4780/5780, MA 4790/5790, MIS 4000, MIS 4100, MIS 4400, SAT 2711 or SAT 3310, ***SAT 3812, SAT 4144, SAT 4283, SAT 5165**

****Students completing the Software Engineering Focus Area: CS 3141 is required in the focus area and therefore is not an elective course option**

*****Students completing the Cybersecurity Focus Area: SAT 3812 is required in the focus area and therefore is not an elective course option**

Focus Area: 15 to 18 credits

Complete one focus area: Statistics, Business IT Solutions, Cybersecurity, Software Engineering, or Design Your Own

Statistics: 15 credits

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

Select three:

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

*MA 4710 & MA 4790 should be taken in Core.

Business IT Solutions: 15 credits

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

Select at least two courses from one area (One course must have MIS prefix):

Systems Thinking for Design

MIS 3000, MIS 4000

Data and IT

MIS 4400, MIS 4000, MA 2330, MA 3740

Cybersecurity: 18 credits

- CS 1111 (3) or CS 1142 (3) or MIS 2100
- SAT 3812 (3)

Select two or more:

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

Select up to two, if needed:

- CS 3712 (3)
- CS 4410 (3)
- CS 4431 (3)
- CS 4471 (3)
- CS 4710 (3)
- MIS 4200 (3)
- SAT 2711 (3)
- SAT 3310 (3)
- SAT 4816 (3)

Software Engineering: 18 credits

- CS 1142 (3)
- CS 3141 (3)

Select four:

- CS 3311 (3)
- CS 3331 (3)
- CS 3712 (3)
- CS 4611 (3)
- CS 4710 (3)
- CS 4711 (3)
- CS 4760 (3)

Design your own Focus Area: 15 credits

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.

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.

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)

Additional Graduation Requirements

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