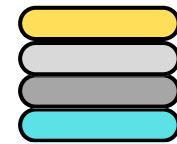




BS Data Science



Software Engineering Focus Area (CS Minor)

Year 1

Year 2

Year 3

Year 4

Fall

Spring

Fall

Spring

Fall

Spring

Fall

Spring

MA 1031(C) or MA 1032(C)
or MA 1160(C) or
MA 1161(C)

DATA 1201 and (CS 1121 or
CS 1131 or CS 1111)

DATA 1202 & (CS 1122
or CS 1131)
& (MA 2320 or MA 2330
or MA 2321)

CS 2311 or
MA 3210 and CS 2321

DATA 1201
Data Science
Programming I
2

DATA 1202
Data Science
Programming
II
3

DATA 2201
Foundations of
Data Science
3

DATA
Communication,
Context, and
Ethics
VIZ/UX
3

DATA 3801
Foundations of
Machine
Learning
3

DATA 3401
Data
Engineering
3

DATA
Elective
3

DATA 4891
Data Science
Capstone
3

MA 1031(or MA 1032 or
MA 1120

CS 1121

(CS 1121 or CS 1131) & (MA 1135
or MA 1160 or MA 1161 or MA 1121
or MA 2160)

(CS 2311 or MA 3210)
and CS 2321

CS 1121
Introduction
to
Programming I
3

CS 1122
Introduction
to
Programming
II
3

CS 2311
Discrete
Structures
3

CS 3425
Introduction to
Database
Systems
3

DATA
Communication,
Context, and
Ethics
3

DATA
Elective
3

CS 3311 and CS 3141(C)

DATA Elective
Machine
Learning or
Artificial
Intelligence
3

MA 1120 or Placement
based on test scores

MA 1160 or MA 1161 or MA
1135 or MA 1121

CS 1122 or CS 1131

CS 1122 or CS 1131

(CS 2311 or
MA 3210) and CS 2321

(CS 2311 or
MA 3210) and CS 2321

MA 1160
Calculus
3

MA 2320
Elementary
Linear Algebra
3

CS 2321
Data
Structures
3

CS 1142
Programming at
the HW/SW
Interface
3

CS 3141
Team
Software
Project
3

CS 4321
Introduction
to Algorithms
3

Math
Elective
3

CS 3141

(must be enrolled as
Freshman)

MA 1160 or MA 1161 or MA
1135 or MA 1121

MA 1160 or MA 1161 or MA
1121 or MA 1135

UN 1015
Composition
3

MA 2710
Intro to
Statistical
Analysis
3

MA 3720
Probability
3

CS 3311
Formal Models
of
Computation
3

**Social and
Ethical
Reasoning
CORE**
3

CS 3141

**Social and
Behavioral
Science
HASS**
3

**General
Education
Elective**
3

**Critical and
Creative
Thinking HASS**
3

UN 1025
Global Issues
3

Lab Science
4

Science
3

**Communication/
Composition**
3

**Humanities
and Fine Arts**
3

Free Elective
3

Free Elective
3

Co-Curricular
0.5 Credits

Co-Curricular
0.5 Credits

Co-Curricular
0.5 Credits

Co-Curricular
0.5 Credits

Co-Curricular
0.5 Credits

Co-Curricular
0.5 Credits

Total Academic Credits: 120
Total co-curricular: 3 credits

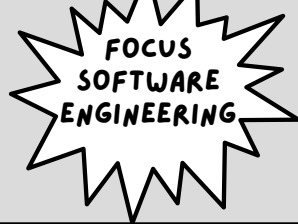


This is an example of one path toward your degree, but there are other options. Please check the link below to see more information and options. If you have any questions regarding this program please email the academic advisor for the program at swyeth@mtu.edu



https://bit.ly/MTU_DataScience





BS DATA SCIENCE 2023-2024

CORE REQUIREMENTS

55–57 Credits

- CS 1121 (3) and CS1122 (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)
- MA 1160 (4)
- MA 2320 (2) or MA 2330 (3)
- MA 2710 (3)
- MA 3720 (3)
- MA 3740 (3) or MA 4710 (3) or MA 4790 (3)
- DATA 1201 (2)
- DATA 1202 (3)
- DATA 2201 (3)
- DATA 3801 (3)
- DATA 3401 (3)
- DATA 4891
- HU 2645 (3) or MIS 3500 (3) or DATA 2600
- CS 3000 (3) or SAT 1700 (3) or DATA 3000 (3)

Free Electives: 5 to 7 credits

Any coursework is allowable, including –co–curricular and coursework below the 1000 level.

Software Engineering

- CS 1142 (3)
- Choose 12 credits:
- CS 3311 (3)
 - CS 3712 (3)
 - CS 4710 (3)
 - CS 4711 (3)
 - CS 4760 (3)

FOCUS AREA

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

7 Credits Minimum

Complete two science courses in two different disciplines (BL, CH, KIP, FW, GE, PH, SS). At least one must include or be taken with the accompanying laboratory.

LAB SCIENCE REQUIREMENTS

Core Courses: 12 credits

Year One

- _UN 1015 (3)
- _UN 1025 or upper level modern language(3)

Year Two

- _ Critical and Creative Thinking
- _ Social Responsibility and Ethical Reasoning (3)

HASS: 12 credits, 6 of the 12 must be at the 3000–4000 level

- _Communication/Composition (minimum 3 credits)
- _ Humanities and Fine Arts (minimum 3 credits)
- _ Social and Behavioral Sciences (minimum 3 credits)
- _ Any course from the General Education Core, HASS, or restricted HASS (0–3 credits)

+Co–curricular Activities: 3 credits

GENERAL EDUCATION REQUIREMENTS

See course catalog for prerequisites

Connect with your advisor @ www.mtu.edu/computing/undergraduate/advising