

MAJOR SEQUENCE AND DEGREE REQUIREMENTS – BS-MDSTMajor: **Multidisciplinary Studies (MDST)**Concentration: **Data Science**Major Requirements: **59 credits + 18 (or more) credits in related electives. (Credits required for Graduation = 120)**

Millersville University's new MDST concentration, Data Science, is a program of study that provides students with a solid foundation of skills in data science by combining knowledge and methodology from computer science, mathematics, and design. In addition, students are required to complete a minor of their choosing to acquire an area of domain knowledge to which they can apply their data science skills.

**CORE PROGRAM 1: Computer Science
(28 credits)**

Course No.	Short Title	_____
CSCI 161	Intro to Programming I (4 cr.)	_____
CSCI 162	Intro to Programming II (4 cr.)	_____
CSCI 362	Data Structures (4 cr.)	_____
CSCI 366	Database Systems (4 cr.)	_____
CSCI 450	Artificial Intelligence (4 cr.)	_____
CSCI 452	Data Mining (4 cr.)	_____
CSCI 453	Lg. Scale Data Analytics & Viz (4 cr.)	_____

**CORE PROGRAM 2: Mathematics and Visualization
(28 credits)**

Course No.	Short Title	_____
CSCI 140	Discrete Structures (4 cr.)	_____
MATH 161	Calculus I (4 cr.)	_____
MATH 211	Calculus II (4 cr.)	_____
MATH 235	Survey of Statistics (3 cr.)	_____
MATH 236	Elements of Statistics (3 cr.)	_____
MATH 304	Matrix Algebra and Applications (4 cr.)	_____
DESN 144	Digital Theory and Skills (3 cr.)	_____
DESN 349	Information Design (3 cr.)	_____

**REQUIRED RELATED
(18 or more credits)**

A minor of the student's choice shall be completed (but must not be MATH or CSCI). The selection of the minor should facilitate the acquisition of sufficient domain knowledge to which their data science skills can be applied.

Potential Minor Subject Areas

- Biology
- Chemistry
- Earth Science
- Economics
- Environmental Issues
- Geography
- Physics
- Social Work

NOTE: this list is **not** exclusive. A full list of minors is available at <https://www.millersville.edu/advisement/curriculum-sheets/minors.php>

REQUIRED CAPSTONE (3 credits)

The capstone experience (3 credits) is an internship, undergraduate honors thesis, or independent research project that challenges students to integrate knowledge across more than one discipline, to engage in professional practice or research, and apply acquired skills and knowledge. The capstone experience will be offered under faculty direction and will be purposeful in connecting students' academic learning to their future career and professional goals.

CSCI 300	Cooperative Experience* (3 cr)	_____
or		
CSCI 498*	Independent Study* (3 cr)	_____
or		
CSCI 489*	Dept. Honors Independent Study* (1 cr.)	_____
CSCI 499*	Dept. Honors Thesis* (2 cr.)	_____
or		
HNRS 489	Univ. Honors Independent Study (1 cr.)	_____
HNRS 499	Univ. Honors Thesis (3 cr.)	_____

* or MATH subject designation

CONCENTRATION FACULTY ADVISORS:

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***Note to the Student:**

This form is provided as a guide. It is **your responsibility** to consult regularly with your adviser **and** be aware of changes/curriculum details not incorporated on this form.