Northwestern
McCORMICK SCHOOL
OF ENGINEERING

MLDS Minor Advising for Material Science Majors

Note: *The guidance here is based on the [2023-2024 Material Science degree requirements](#). You can find Machine Learning and Data Science (MLDS) Minor curriculum details on the [MLDS website](#).*

Overview

The MLDS minor consists of **8 courses**:
➔ 1 course in Programming Foundations
➔ 1 course in Statistics Foundations
➔ 4 specialization courses (Machine Learning, Data Science, or Hybrid)
➔ 2 electives in machine learning and data science.

The specific courses that satisfy these requirements can be found [here](#).

Double Counting Rules

The McCormick School of Engineering requires that each minor consists of **4 unique courses** that are **not** used towards any other major or minor requirements. "Major requirements" are those designated as "Material Science and Engineering Major (16 courses)," which can be found on either MAS or the [Material Science website](#).

> ‣ MatSci Major Requirements
> Major Requirement

MAS dropdown for specific major requirements

Tips

➔ Be mindful of prerequisites for both the MLDS Specialization and Elective courses. Declaration of the minor does not imply that any prerequisites will be waived for you.

The guides below represent some of the possible paths for Material Science majors who are pursuing the MLDS minor. Other paths are possible – talk to your advisor or email dse@northwestern.edu.

Potential Machine Learning Specialization Tracks

Course Selection	How this counts towards your MatSci degree	Notes
Programming Foundations		
COMP_SCI 150	Unrestricted Elective	Unique Course
Statistics Foundation		
MLDS Approved Statistics Foundation	Major Requirement (Basic Engineering: Statistics and Quality Control)	
Machine Learning Specialization		
COMP_SCI 111	Unrestricted Elective	Unique Course
COMP_SCI 214	Unrestricted Elective	Unique Course
COMP_SCI 348	Major Requirement (Technical Elective: Group II)	
COMP_SCI 349	Major Requirement (Technical Elective: Group II)	
MLDS Electives		
MAT_SCI 391	Major Requirement (Core)	
MLDS Approved Elective	Unrestricted Elective	Unique Course

Potential option: Machine Learning specialization using 300-level COMP_SCI courses as Technical Electives, MAT_SCI 391 as an MLDS Elective

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Potential Data Science Specialization Tracks

Course Selection	How this counts towards your MatSci degree	Notes
Programming Foundations		
COMP_SCI 150	Unrestricted Elective	Unique Course
Statistics Foundation		
MLDS Approved Statistics Foundation	Major Requirement (Basic Engineering: Statistics and Quality Control)	
Data Science Specialization		
COMP_SCI 217	Unrestricted Elective	Unique Course
IEMS 304	Unrestricted Elective	Unique Course
DATA_ENG 200	Major Requirement (Technical Elective: Group II)	
DATA_ENG 300	Major Requirement (Technical Elective: Group II)	
MLDS Electives		
MAT_SCI 391	Major Requirement (Core)	
MLDS Approved Elective	Unrestricted Elective	Unique Course

Potential option: Data Science specialization using DATA_ENG courses as a Technical Electives, MAT_SCI 391 as an MLDS Elective

Potential Hybrid Specialization Tracks

Course Selection	How this counts towards your MatSci degree	Notes
Programming Foundations		
COMP_SCI 150	Unrestricted Elective	Unique Course
Statistics Foundation		
MLDS Approved Statistics Foundation	Major Requirement (Basic Engineering: Statistics and Quality Control)	
Hybrid Specialization		
COMP_SCI 214	Unrestricted Elective	Unique Course
COMP_SCI 349	Major Requirement (Technical Elective: Group II)	
DATA_ENG 200	Major Requirement (Technical Elective: Group II)	
DATA_ENG 300	Major Requirement (Technical Elective: Group II)	
MLDS Electives		
MLDS Approved Elective	Unrestricted Elective	Unique Course
MLDS Approved Elective	Unrestricted Elective	Unique Course

Potential option: Hybrid specialization using specialization as Technical Electives