Northwestern
McCORMICK SCHOOL
OF ENGINEERING

MLDS Minor Advising for Civil & Environmental Engineering Majors

Note: *The guidance here is based on the 2023-2024 Civil & Environmental Engineering 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 "Major Program (21 units)," which can be found on either MAS or the Civil & Environmental Engineering website.

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.

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The guides below represent some of the possible paths for Civil & Environmental Engineering 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 CivE degree	Notes
Programming Foundations		
COMP_SCI 150	Unrestricted Elective	Unique Course
Statistics Foundation		
CIV_ENV 306	Major Requirement (Basic Engineering: Probability, Statistics, and Quality Control)	
Machine Learning Specialization		
COMP_SCI 111	Unrestricted Elective	Unique Course
COMP_SCI 214	Unrestricted Elective	Unique Course
COMP_SCI 348	Unrestricted Elective	Unique Course
COMP_SCI 349	Unrestricted Elective	Unique Course
MLDS Electives		
CIV_ENV 304	Major Requirement (Basic Engineering: System Engineering and Analysis)	
IEMS 313	Major Requirement (Technical Elective)	

Potential option: Machine Learning specialization using Technical Electives, Basic Engineering as double counts

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Potential Data Science Specialization Tracks

Course Selection	How this counts towards your CivE degree	Notes
Programming Foundations		
COMP_SCI 150	Unrestricted Elective	Unique Course
Statistics Foundation		
CIV_ENV 306	Major Requirement (Basic Engineering: Probability, Statistics, and Quality Control)	
Data Science Specialization		
COMP_SCI 217	Unrestricted Elective	Unique Course
IEMS 304	Major Requirement (Technical Elective)	
DATA_ENG 200	Unrestricted Elective	Unique Course
DATA_ENG 300	Major Requirement (Technical Elective)*	
MLDS Electives		
CIV_ENV 304	Major Requirement (Basic Engineering: System Engineering and Analysis)	
MLDS Approved Elective	Unrestricted Elective	Unique Course

Potential option: Data Science specialization using Technical Electives, Basic Engineering as double counts

** Note: DATA_ENG 300 must be petitioned to be accepted as a CivE Technical Elective requirement.*

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Potential Hybrid Specialization Tracks

Course Selection	How this counts towards your CivE degree	Notes
Programming Foundations		
COMP_SCI 150	Unrestricted Elective	Unique Course
Statistics Foundation		
CIV_ENV 306	Major Requirement (Basic Engineering: Probability, Statistics, and Quality Control)	
Hybrid Specialization		
COMP_SCI 214	Unrestricted Elective	Unique Course
COMP_SCI 349	Unrestricted Elective	Unique Course
DATA_ENG 200	Unrestricted Elective	Unique Course
DATA_ENG 300	Major Requirement (Technical Elective)*	
MLDS Electives		
CIV_ENV 304	Major Requirement (Basic Engineering: System Engineering and Analysis)	
IEMS 313	Major Requirement (Technical Elective)	

Potential option: Hybrid specialization using Technical Electives, Basic Engineering as double counts

** Note: DATA_ENG 300 must be petitioned to be accepted as a CivE Technical Elective requirement.*