MLDS Minor Advising for Mechanical Engineering Majors

Note: *The guidance here is based on the [2023-2024 Mechanical 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 [Mechanical Engineering website]().

> ‣ MechE 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 Mechanical 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 MechE degree	Notes
Programming Foundations		
COMP_SCI 150	Unrestricted Elective	Unique Course
Statistics Foundation		
CHEM_ENG 312/ CIV_ENV 306/ IEMS 303	Major Requirement (Mechanical Engineering Breadth Concentration)	
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		
MLDS Approved Elective in MECH_ENG, 300-level	Major Requirement (Mechanical Engineering Breadth Concentration)	
MLDS Approved Elective in MECH_ENG, 300-level	Major Requirement (Mechanical Engineering Breadth Concentration)	

Potential option: Machine Learning specialization using Mechanical Engineering Breadth Concentration

* Note: Students in the Breadth Concentration who have taken both COMP_SCI 111 and COMP_SCI 150 are able to petition for COMP_SCI 214 to count for the MECH_ENG 214 requirement.

Potential Data Science Specialization Tracks

Course Selection	How this counts towards your MechE degree	Notes
Programming Foundations		
COMP_SCI 150	Unrestricted Elective	Unique Course
Statistics Foundation		
CHEM_ENG 312/ CIV_ENV 306/ IEMS 303	Major Requirement (Mechanical Engineering Breadth Concentration)	
Data Science Specialization		
COMP_SCI 217	Unrestricted Elective	Unique Course
IEMS 304	Unrestricted Elective	Unique Course
DATA_ENG 200	Unrestricted Elective	Unique Course
DATA_ENG 300	Unrestricted Elective	Unique Course
MLDS Electives		
MLDS Approved Elective in MECH_ENG, 300-level	Major Requirement (Mechanical Engineering Breadth Concentration)	
MLDS Approved Elective in MECH_ENG, 300-level	Major Requirement (Mechanical Engineering Breadth Concentration)	

Potential option: Data Science specialization using Mechanical Engineering Breadth Concentration as MLDS Electives

Potential Hybrid Specialization Tracks

Course Selection	How this counts towards your MechE degree	Notes
Programming Foundations		
COMP_SCI 150	Major Requirement (Basic Technical)	
Statistics Foundation		
IEMS 303	Major Requirement (Probability and Statistics)	
Hybrid Specialization		
COMP_SCI 214*	Unrestricted Elective	
COMP_SCI 349	Unrestricted Elective	
DATA_ENG 200	Unrestricted Elective	
DATA_ENG 300	Unrestricted Elective	
MLDS Electives		
MLDS Approved Elective in MECH_ENG, 300-level	Major Requirement (Mechanical Engineering Breadth Concentration)	
MLDS Approved Elective in MECH_ENG, 300-level	Major Requirement (Mechanical Engineering Breadth Concentration)	

Potential option: Hybrid specialization using Breadth Concentration as MLDS Electives

* Note: Students in the Breadth Concentration who have taken both COMP_SCI 111 and COMP_SCI 150 are able to petition for COMP_SCI 214 to count for the MECH_ENG 214 requirement.

** The tables above represent a possible track for Mechanical Engineering majors with a Breadth concentration. For help on other concentrations, please speak with your advisor. Robotics and Design concentrations can also configure certain tracks in a manner that double counts four courses with the MLDS minor.