

## MLDS Minor Advising for Computer Engineering Majors

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

▸ CE 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 Computer Engineering majors who are pursuing the MLDS minor. Other paths are possible – talk to your advisor or email [dse@northwestern.edu](mailto:dse@northwestern.edu).

### Potential Machine Learning Specialization Tracks

Course Selection	How this counts towards your CE degree	Notes
<i>Programming Foundations</i>		
COMP_SCI 150	Major Requirement (Area Electives: Software Systems)	
<i>Statistics Foundation</i>		
CHEM_ENG 312/ CIV_ENV 306/ IEMS 303	Major Requirement (300-level Technical Elective)	
<i>Machine Learning Specialization</i>		
COMP_SCI 111	Major Requirement (Core)	
COMP_SCI 214	Unrestricted Elective	Unique Course
COMP_SCI 348	Major Requirement (300-level Technical Elective)*	
COMP_SCI 349	Unrestricted Elective*	Unique Course
<i>MLDS Electives</i>		
MLDS Approved Elective	Unrestricted Elective	Unique Course
MLDS Approved Elective	Unrestricted Elective	Unique Course

*Potential option 1: Machine Learning specialization using Statistics Foundations and COMP\_SCI 348 as a Technical Elective requirements*

\* Note: Either COMP\_SCI 348 or COMP\_SCI 349 could fulfill the 300-level Technical Course requirement.

Course Selection	How this counts towards your CE degree	Notes
<i>Programming Foundations</i>		
COMP_SCI 150	Major Requirement (Area Electives: Software Systems)	
<i>Statistics Foundation</i>		
CHEM_ENG 312/ CIV_ENV 306/ IEMS 303	Major Requirement (300-level Technical Elective)	
<i>Machine Learning Specialization</i>		
COMP_SCI 111	Major Requirement (Core)	
COMP_SCI 214	Major Requirement (Area Electives: Software Systems)	
COMP_SCI 348	Unrestricted Elective	Unique Course
COMP_SCI 349	Unrestricted Elective	Unique Course
<i>MLDS Electives</i>		
MLDS Approved Elective	Unrestricted Elective	Unique Course
MLDS Approved Elective	Unrestricted Elective	Unique Course

*Potential option 2: Machine Learning specialization using Statistics Foundation as a Technical Elective, COMP\_SCI 214 as an Area Elective*

**Potential Data Science Specialization Tracks**

Course Selection	How this counts towards your CE degree	Notes
<i>Programming Foundations</i>		
COMP_SCI 150	Major Requirement (Area Electives: Software Systems)	
<i>Statistics Foundation</i>		
CHEM_ENG 312/ CIV_ENV 306/ IEMS 303	Major Requirement (300-level Technical Elective)	
<i>Data Science Specialization</i>		
COMP_SCI 217	Unrestricted Elective	Unique Course
IEMS 304	Major Requirement (300-level Technical Elective)	
DATA_ENG 200	Unrestricted Elective	Unique Course
DATA_ENG 300	Major Requirement (300-level Technical Elective)	
<i>MLDS Electives</i>		
MLDS Approved Elective	Unrestricted Elective	Unique Course
MLDS Approved Elective	Unrestricted Elective	Unique Course

*Potential option: Data Science specialization using Statistics Foundation, IEMS 304, and DATA\_ENG 300 as Technical Electives*



### Potential Hybrid Specialization Tracks

Course Selection	How this counts towards your CE degree	Notes
<i>Programming Foundations</i>		
COMP_SCI 150	Major Requirement (Area Electives: Software Systems)	
<i>Statistics Foundation</i>		
CHEM_ENG 312/ CIV_ENV 306/ IEMS 303	Major Requirement (300-level Technical Elective)	
<i>Hybrid Specialization</i>		
COMP_SCI 214	Major Requirement (Area Electives: Software Systems)	
COMP_SCI 349	Unrestricted Elective	Unique Course
DATA_ENG 200	Unrestricted Elective	Unique Course
DATA_ENG 300	Major Requirement (300-level Technical Elective)	
<i>MLDS Electives</i>		
MLDS Approved Elective	Unrestricted Elective	Unique Course
MLDS Approved Elective	Unrestricted Elective	Unique Course

*Potential option: Hybrid specialization using using Statistics Foundation and DATA\_ENG 300 as Technical Electives, COMP\_SCI 214 as an Area Elective*

