

## Computer Science DSE Minor Guidance 2022-2023

**Note:** The guidance here is based on the [2022 COMP\\_SCI degree requirements](#). Those who are following previous years' catalogs should use the [2021 and prior sheet](#) for guidance. You can find Data Science and Engineering (DSE) Minor curriculum details on the [DSE website](#).

### Overview

The DSE Minor consists of **8 courses**. This includes the 4 core courses for Data Science and Engineering that requires 1 course taken in each area of:

- Programming Foundations
- Statistics Foundations
- Intermediate Programming and Algorithmic Thinking
- Applied Machine Learning

The minor also requires 2 studio courses and 2 DSE approved electives. All courses that count toward each requirement can be found [here](#).

### Double Counting Rules

McCormick 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)" in the catalog and designated with purple banners in your MAS degree audit. **Unrestricted electives do not count towards major requirements.** This means you can **count up to 4 courses towards both the DSE minor and your major requirements.**

### Tips

- Take advantage of the flexibility in some of the minor requirements, *e.g, if you have credit for both COMP\_SCI 349 and IEMS\_304, you can use IEMS\_304 as an unrestricted elective to fulfill the machine learning requirement and double count a DSE elective class.*
- Be mindful of prerequisites, both for the DSE Core Courses and DSE Electives. Declaration of the minor does not imply that any prerequisites will be waived for you.

*The guides below represent some possible paths for Computer Science majors who are pursuing the DSE minor. Other paths are possible—talk to your advisor or email us at [dse@northwestern.edu](mailto:dse@northwestern.edu).*

***Using COMP\_SCI 349 or ELEC\_ENG 375 towards Minor***

DSE Minor Requirements	Course Selection	How does this count for my degree?	Notes
<b>Data Science Core: 4 Courses</b>			
Programming Foundations	COMP_SCI 211	Major Requirement	
Statistics Foundation	IEMS 201	Major Requirement	
Intermediate Programming	COMP_SCI 214	Major Requirement	
Applied Machine Learning	COMP_SCI 349/ ELEC_ENG 375	Major Requirement (Breadth Course)	
<b>Data Science Studio Courses: 2 Courses</b>			
	DATA_ENG 200	Unrestricted Elective	Unique Course
	DATA_ENG 300	Unrestricted Elective	Unique Course
<b>Elective: 2 Courses</b>			
	DSE Approved Elective	Unrestricted Elective	These can be CS Courses, as long as they are not used towards CS major electives.
	DSE Approved Elective	Unrestricted Elective	

***Using IEMS\_304 towards Minor***

DSE Minor Requirements	Course Selection	How does this count for my degree?	Notes
<b>Data Science Core: 4 Courses</b>			
Programming Foundations	COMP_SCI 211	Major Requirement	
Statistics Foundation	IEMS 201	Major Requirement	
Intermediate Programming	COMP_SCI 214	Major Requirement	
Applied Machine Learning	IEMS 304	Unrestricted Elective	Unique Course
<b>Data Science Studio Courses: 2 Courses</b>			
	DATA_ENG 200	Unrestricted Elective	Unique Course
	DATA_ENG 300	Unrestricted Elective	Unique Course
<b>Elective: 2 Courses</b>			
	DSE Approved COMP_SCI Elective	Major Requirement (Breadth Course/Technical Elective)	
	DSE Approved Elective	Unrestricted Elective	This can be a CS Course as long as it is not used as a CS major electives.