

Electrical & Computer Engineering DSE Minor Guidance 2022-2023

Note: The guidance here is based on the [2022 ELEC_ENG degree requirements](#) and [2022 COMP_ENG 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 150 and COMP_SCI 211, you can use COMP_SCI 150 as an unrestricted to fulfill the programming foundations requirement and double count an extra DSE elective.*
- 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 Electrical and Computer Engineering majors who are pursuing the DSE minor. Other paths are possible—talk to your advisor or email us at dse@northwestern.edu.

If using Programming Foundations Course as an Unrestricted Elective

DSE Minor Requirements	Course Selection	How does this count for my degree?	Notes
Data Science Core: 4 Courses			
Programming Foundations	COMP_SCI 150*	Unrestricted Elective	Unique Course
Statistics Foundation	Any listed choice	Unrestricted Elective	Unique Course
Intermediate Programming	COMP_SCI 214/ COMP_SCI 217	Unrestricted Elective	Unique Course
Applied Machine Learning	COMP_SCI 349/ ELEC_ENG 375/ IEMS 304	Major Requirement (Technical Elective)	
Data Science Studio Courses: 2 Courses			
	DATA_ENG 200	Unrestricted Elective	Unique Course
	DATA_ENG 300	Major Requirement (Technical Elective)	
Elective: 2 Courses			
	DSE Approved Elective	Major Requirement (Technical Elective)	
	DSE Approved Elective	Major Requirement (Technical Elective)	

**ECE majors must take both COMP_SCI 150 and 211 to use COMP_SCI 150 as an unrestricted elective, otherwise it will have to be double counted.*

If Double Counting Programming Foundation Course

DSE Minor Requirements	Course Selection	How does this count for my degree?	Notes
Data Science Core: 4 Courses			
Programming Foundations	COMP_SCI 211/ COMP_SCI 150	Major Requirement (COMP_SCI 150 counts as Technical Elective for COMP_ENG students)	
Statistics Foundation	Any listed choice	Unrestricted Elective	Unique Course
Intermediate Programming	COMP_SCI 214/ COMP_SCI 217	Unrestricted Elective	Unique Course
Applied Machine Learning	COMP_SCI 349/ ELEC_ENG 375/ IEMS 304	Major Requirement (Technical Elective)	
Data Science Studio Courses: 2 Courses			
	DATA_ENG 200	Unrestricted Elective	Unique Course
	DATA_ENG 300	Major Requirement (Technical Elective)	
Elective: 2 Courses			
	DSE Approved Elective	Major Requirement (Technical Elective)	Double Count
	DSE Approved Elective	Unrestricted Elective	This can be an ECE or CS Course as long as it is not used towards a major elective