

Chemical Engineering DSE Minor Guidance 2022-2023

Note: The guidance here is based on the [2022 CHEM 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 elective 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 Chemical Engineering majors who are pursuing the DSE minor. Other paths are possible—talk to your advisor or email us at dse@northwestern.edu.

Using COMP_SCI 150 towards Minor

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	CHEM_ENG 312/ IEMS 303	Major Requirement	
Intermediate Programming	COMP_SCI 217	Unrestricted Elective	Unique Course
Applied Machine Learning	IEMS 304	Unrestricted Elective	Unique Course
Data Science Studio Courses: 2 Courses			
	DATA_ENG 200	Unrestricted Elective	Unique Course
	DATA_ENG 300	Major Requirement* (Technical Elective Category D)	
Elective: 2 Courses			
	CHEM_ENG 379	Major Requirement (Technical Elective Category A)	
	MAT_SCI 391	Major Requirement (Technical Elective Category B)	

**Must petition to count DATA_ENG 300 as a Category D Technical elective*

Using COMP_SCI 211 towards Minor

DSE Minor Requirements	Course Selection	How does this count for my degree?	Notes
Data Science Core: 4 Courses			
Programming Foundations	COMP_SCI 211	Major Requirement (Technical Elective Category B)	
Statistics Foundation	CHEM_ENG 312/ IEMS 303	Major Requirement	
Intermediate Programming	COMP_SCI 214	Unrestricted Elective	Unique Course
Applied Machine Learning	COMP_SCI 349	Major Requirement (Technical Elective Category B)	
Data Science Studio Courses: 2 Courses			
	DATA_ENG 200	Unrestricted Elective	Unique Course
	DATA_ENG 300	Unrestricted Elective	Unique Course
Elective: 2 Courses			
	CHEM_ENG 379	Major Requirement (Technical Elective Category A)	
	DSE Approved Elective	Unrestricted Elective	This can be an CHEM_E Course as long as it is not used towards a major elective