

Biomedical Engineering DSE Minor Guidance 2022-2023

Note: The guidance here is based on the [2022 BMD 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

- Since most of the DSE Minor courses can be counted toward your major requirements but four courses must be unique to the minor, you can select to count some courses toward your unrestricted electives.
- 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 Biomedical 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 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	BMD_ENG 220/ IEMS 303	Major Requirement	
Intermediate Programming	COMP_SCI 217	Unrestricted Elective	Unique Course
Applied Machine Learning	IEMS 304	Major Requirement (BME Elective)	
Data Science Studio Courses: 2 Courses			
	DATA_ENG 200	Unrestricted Elective	Unique Course
	DATA_ENG 300	Unrestricted Elective	Unique Course
Elective: 2 Courses			
	DSE Approved Elective	Major Requirement (BME Elective)	
	DSE Approved Elective	Major Requirement (BME Elective)	

If 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 (BME Elective Category B)	
Statistics Foundation	BMD_ENG 220/ IEMS 303	Major Requirement	
Intermediate Programming	COMP_SCI 214	Unrestricted Elective	Unique Course
Applied Machine Learning	IEMS 304/ COMP_SCI 349	Major Requirement (Technical Elective)	
Data Science Studio Courses: 2 Courses			
	DATA_ENG 200	Unrestricted Elective	Unique Course
	DATA_ENG 300	Unrestricted Elective	Unique Course
Elective: 2 Courses			
	DSE Approved Elective	Major Requirement (BME Elective)	
	DSE Approved Elective	Unrestricted Elective	This can be an BME Course as long as it is not used as a major elective.