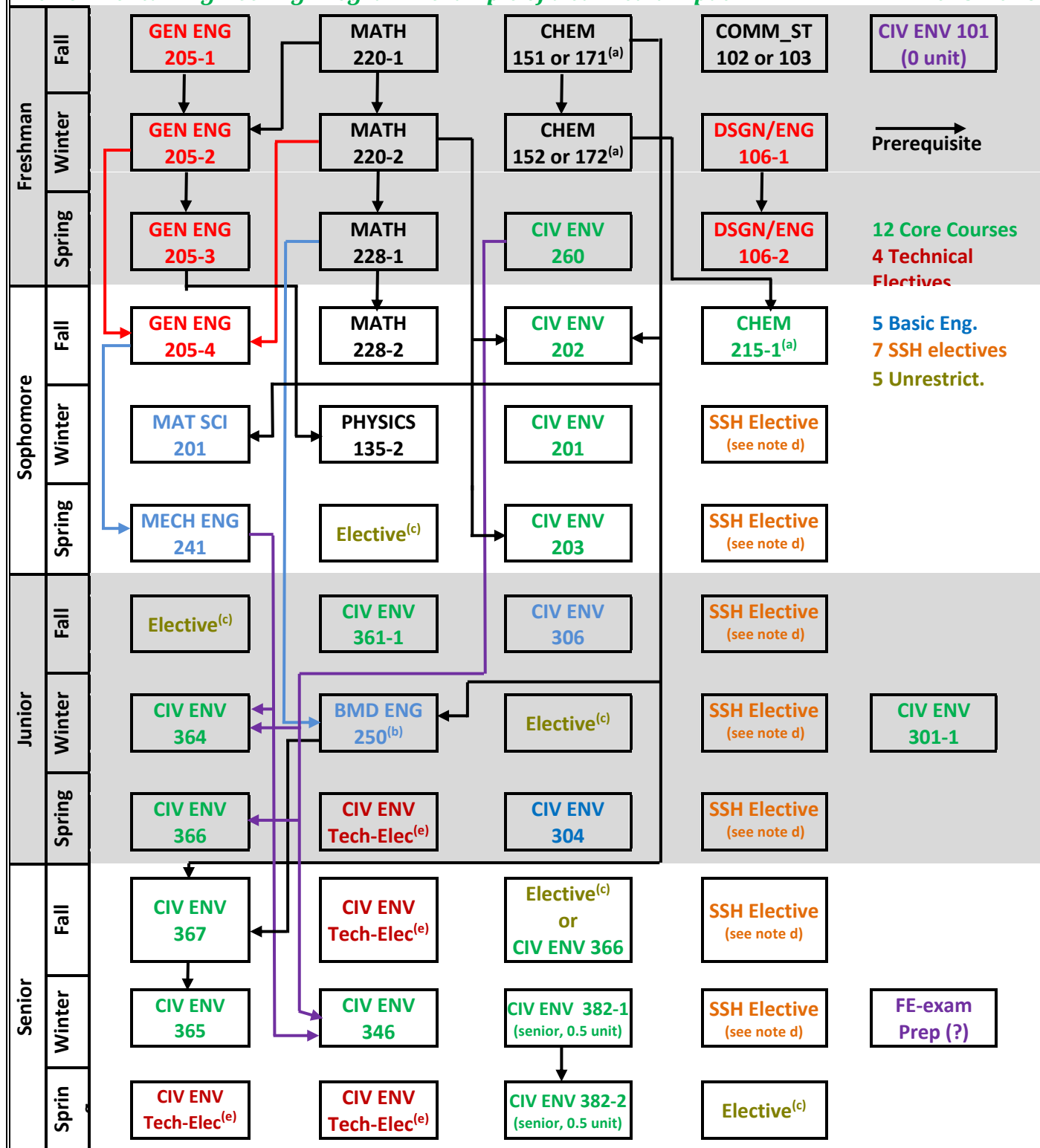


# Environmental Engineering Program - example of a curriculum path

2025-2026



## Notes:

- These courses have a laboratory requirement CHEM 161, 162, or 181, 182. If no placement in Chemistry then take CHEM 110 in the Fall, and then CHEM 131, 132 with associated laboratories CHEM 141, 142. CHEM 215-1 has a laboratory requirement CHEM 235-1.
- May choose from BMD ENG 250 or CHEM ENG 211 (need approval from CHEME for enrollment). Other Basic Engineering Thermodynamics course can be taken after approval.
- May choose from any course offered for credit by the University.
- Courses must be selected to meet the Social Science-Humanities requirement.
- Choose courses from the approved list: at least 3 must carry 100% engineering topics; courses listed are recommended.

# Environmental Engineering Program 2025-2026

## Social Science-Humanities Requirement (7 units)

Seven courses are required to satisfy the requirements of this subgroup. The seven courses must meet the following criteria.

- Maximum of 5 units from either social science or humanities category
- At least 3 units must be thematically related
- No more than 3 units of 100-level courses
- AP credits allowed

Foreign language study can be incorporated into the program, but should be started as early as possible, preferably in the freshman year.

Courses taken for a student's Social Science/Humanities requirement must be approved in advance by the McCormick Humanities Panel. Complete requirement information is at the McCormick Undergraduate Engineering Office web site, <http://www.mccormick.northwestern.edu/students/undergraduate/social-science-humanities-theme/index.html>. You must submit your theme form via McCormick Advising System (MAS).

## Technical Electives (TE) – choose four courses

Technical Electives must be taken from the lists below. We are suggesting 3 different tracks based on sets of courses organized around specific themes. **General rule:** *a minimum of three (3) of these electives must carry 100% engineering topics<sup>(1)</sup>, only one (1) CIV\_ENV 399 can be counted towards a technical elective.*

### Urban Sustainability

CIV_ENV 395 - Indoor Air Quality
CIV_ENV 387 - Design of Sustainable Urban Districts
CIV_ENV 353 – Energy Geostructures and Geosystems
CIV_ENV 309 – Climate and Energy - Law & Policy - (100% general topic cc

### Fate of contaminants in the Environment

CIV_ENV 361-2 – Public and Environmental Health
CIV_ENV 370 – Emerging Organic Contaminants
CIV_ENV 317 – Biogeochemistry (100% MTS)
CIV_ENV 395 - Redox and Electrochemical Processes in Water

### Resource Recovery

CIV_ENV 353 – Energy Geostructures and Geosystems
CIV_ENV 309 – Climate and Energy - Law & Policy - (100% general topic cc
CIV_ENV 442/443 - Environmental Biotechnology/Microbial Ecology for
CIV_ENV 399 - Research project (100% Eng.)

**A la carte:** If you do not want to follow any of these tracks you need to take 3 courses that count towards 100% engineering content with at least 2 from {CIV\_ENV 361-2, 370, 395-Indoor Air Quality} and any engineering 300 level - or higher - course counting towards 100% engineering content, and then one<sup>(1)</sup> 300 level course choose that you can choose from {CIV\_ENV: 303; 314; 317; 395-20,23,25; EARTH 340; 343; 361; 370}. You can also choose courses at the graduate-level courses such as CIV\_ENV 440<sup>(2)</sup>, CIV\_ENV 442/443<sup>(2)</sup>. Only 1 CIV\_ENV 399 can be counted towards a technical elective. In addition, the GEN-ENG 220-1,2 sequence can count towards 1 technical elective.

<sup>(1)</sup> 100 % MTS: <https://www.mccormick.northwestern.edu/academics/undergraduate/abet/course-partitioning.html>

<sup>(2)</sup> Requires instructor permission and a permission number from the office of the Department.

## BS in Environmental Engineering Curriculum - at a Glance (48 units)

### McCormick Requirements (27 units)

Mathematics (4 units)	
1	Math 220: Differential Calculus of One Variable Functions
2	Math 224: Integral Calculus of One Variable Functions
3	Math 230: Differential Calculus of Multivariable Functions
4	Math 234: Multiple Integration and Vector Calculus

Engineering Analysis (4 units)	
5	EA1 (Programming and Linear Algebra)
6	EA2 (Statics and Dynamics)
7	EA3 (Systems Dynamics Analysis)
8	EA4 (Differential Equations)

Basic Science (4 units)	
9	Chemistry 131, 151, 171
10	Chemistry 132, 152, 172
11	Physics 135-2
12	Chemistry and Physics Labs

Design and Communication (3 units)	
13	DSN 106-1,2: Design Thinking & Communication
14	ENG 106-1,2: Writing
15	Public Speaking: COMM_ST 102 or 103

Humanities Theme (7 units)	
16	
17	
18	
19	
20	
21	
22	

Unrestricted Electives (5 units)	
23	CIV ENV 301-1 Professional Development (0.3 units)
24	
25	
26	
27	

### Environmental Eng. Major Requirements (21 units)

Gateway Courses (3 units)	
	CIV_ENV 201 – Engineering Possibilities: Decision Science in the Age of Smart Technologies
	CIV_ENV 202 – Biological & Ecological Principles
	CIV_ENV 203 – Earth in the Anthropocene

Basic Engineering (5 units)	
	MAT SCI 201: Material Science
	ME 241: Fluid Mechanics I
	BME 250, or ChemE 211: Thermodynamics
	CIV ENV 304 - Civil and Environmental Engineering Analysis
	CIV ENV 306: Uncertainty Analysis

ENV ENG Core Courses (9 units)	
	CHEM 215-1/235-1 – Organic Chemistry I
	CIV_ENV 260 – Environmental Systems and Processes
	CIV_ENV 346 – Ecohydrology
	CIV_ENV 361-1 – Environmental Microbiology
	CIV_ENV 364 – Sustainable Water Systems
	CIV_ENV 365 – Environmental Laboratory
	CIV_ENV 366 – Dynamics in Chemical Transport and Reaction
	CIV_ENV 367 – Chemical Processes in Aquatic Systems
	CIV_ENV 382 -1,2 – Capstone Design

Technical Electives (4 units) - See tracks below and the approved list of courses*	

\* At least 3 units must be 100% Engg Topic & only 1 399 can count as Tech Elective  
 GEN\_ENG 220-1,2 - CAD & GPS can count towards 1 Tech. Elec.

#### Urban Sustainability

CIV\_ENV 395 - Indoor Air Quality  
 CIV\_ENV 387 - Design of Sustainable Urban Districts  
 CIV\_ENV 353 – Energy Geosystems and Geosystems  
 CIV\_ENV 309 – Climate and Energy - Law & Policy - (100% general topic course)

#### Fate of contaminants in the Environment

CIV\_ENV 361-2 – Public and Environmental Health  
 CIV\_ENV 370 – Emerging Organic Contaminants  
 CIV\_ENV 317 – Biogeochemistry (100% MTS)  
 CIV\_ENV 395 - Redox and Electrochemical Processes in Water

#### Resource Recovery

CIV\_ENV 353 – Energy Geosystems and Geosystems  
 CIV\_ENV 309 – Climate and Energy - Law & Policy - (100% general topic course)  
 CIV\_ENV 442/443 - Environmental Biotechnology/Microbial Ecology for Resource Recovery  
 CIV\_ENV 399 - Research project (100% Eng.)