



ENVIRONMENTAL ENGINEERING EMPHASIS

The environmental engineering emphasis suggests completion of 13 credits of course work from the lists below in replacement of various electives of the main Chemical Engineering major. See the next page for an example and your advisor for further details.

Microbiology Suggestion

BIOL 341: Microbial Process in Engineering and Natural Sciences; **3 credits**

OR

BIOL 331: Microbiology; **3 credits**

Chemical and Biological Engineering Suggestions

CBE 455/555: Pollution Phenomena and Process Design; **3 credits**

CBE 434/534: Design of Separation Processes; **1 credit**

Environmental Engineering Suggestions

CEE 326: Environmental Engineering I; **3 credits**

CEE 421/521: Aqueous Geochemistry; **3 credits**

Additional Courses

CBE 434L/534L: Design of Separation Processes Laboratory; **1 credit**

CBE 484/584: Fundamentals of Biochemical Engineering; **3 credits**

CBE 484L/584L: Biochemical Engineering Laboratory; **1 credit**

CEE 327/L: Environmental Engineering II/Laboratory; **3 credits**

CEE 425/525: Sustainable Engineering; **3 credits**

CEE 426/526: Environmental Engineering Unit Operations and Processes; **3 credits**

CEE 427/527: Environmental Engineering Biological Process Design; **3 credits**

CHEM 464/564: Biochemistry I; **3 credits**

BIOL 311: Principles of Ecology; **3 credits**

BIOL 406/506: Global Environmental Change; **3 credits**

NOTE: The Environmental Engineering minor offered through the Civil and Environmental Engineering (CEE) Department (<https://www.sdsmt.edu/Academics/Minors-and-Certificates/>) requires 12 credits of CEE coursework, CEE 326, CEE 327/L, CEE 426/526, and CEE 427/527, which would also count towards the engineering elective and department approved electives, and 6 credits of electives that are fulfilled through the CBE core curriculum or CBE electives.

BS Chemical Engineering Curriculum: 2018/2019 Catalog

Name _____

Gen. Ed. Requirements (*) must be completed in first 64 credits at SDSM&T.

*Engl 101 (3) _____	* Humanities courses (6) (CD ² cr.) _____	* Soc. Sci courses (6) (CD ² cr.) _____	
*Engl 279 (3) _____	_____	_____	_____
Engl 289 ⁷ (3) _____	_____	_____	_____

CBE Required (45)

Chem Required (23)

Math (15)

- CBE 111/111L (2) _____
- CBE 117L (1) _____
- CBE 217 (3) _____
- CBE 218 (3) _____
- CBE 222 (3) _____
- CBE 250 (2) _____
- CBE 317 (3) _____
- CBE 318 (3) _____
- CBE 321 (3) _____
- CBE 333 (1) _____
- CBE 333L (1) _____
- CBE 343 (3) _____
- CBE 361L (1) _____
- CBE 362L (1) _____
- CBE 364 (2) _____
- CBE 417 (2) _____
- CBE 433 (3) _____
- CBE 461L (1) _____
- CBE 463 (2) _____
- CBE 465 (2) _____
- CBE 466 (2) _____
- CBE 487 (1) _____

- *Chem 112 (3) _____
- *Chem 112L (1) _____
- *Chem 114 (3) _____
- *Chem 114L (1) _____
- Chem 220L (1) _____
- Chem 332 (2) _____
- Chem 332L (1) _____
- Chem 326 (3) _____
- Chem 328 (3) _____
- Chem 342 (2) _____
- Chem 344 (2) _____
- Chem 344L (1) _____

- Math _____
- Math _____
- *Math 123 (4) _____
- *Math 125 (4) _____
- *Math 225 (4) _____
- Math 321 (3) _____

ChE Electives³ (6)

- CBE 455/555 (3) _____
- CBE 434/534 (1) _____
- CBE _____ () _____
- CBE _____ () _____
- CBE _____ () _____

Physics (6)

- Phys _____
- *Phys 211 (3) _____
- *Phys 213 (3) _____

ChE Lab Elective⁴ (1)

- CBE _____ (1) _____

Engineering Elective⁶ (3)

- CEE 326 (EnvE Minor) (3) _____
- CEE 421/521 (3) _____

Dept. Approved Elect.⁵ (7)

- CEE 326 (EnvE Minor) (3) _____
- CEE 421/521 (3) _____
- CEE 327/L (EnvE Minor) (3) _____
- CEE 426/526 (EnvE Minor) (3) _____
- CEE 427/527 (EnvE Minor) (3) _____

Biology Elective¹ (3)

- Biol 341 (3) _____
- BIOL 331 (3) _____

Total Credits Required: 130

<ol style="list-style-type: none"> 1. BIOL Elective: (3) Select from BIOL 341, 371 or others approved by advisor. 2. ChE Elective (6): Select from CBE 424, 434/434L, 444, 450, 455, 474, 474L, 475, 476, 484, 484L, 485, 485L, 488, 489, 491, 492, 498, or others approved by advisor. 3. ChE Lab Elective (1): Select from CBE 434L, 474L, 484L, 485L or 498 or others approved by advisor. 4. Dept. Approved Elective (7): Select from the following: CBE, Chem, or other approved courses to fulfill emphasis electives. These course are typically at a 120 level or higher. May include up to three (3) credits of advanced military science, up to six (6) credits of cooperative education (CP297, CP397, or CP497), up to three (3) credits of 300 level or above Humanities, Social Sciences or Business, and one (1) credit of PE or MUEN. 5. Engineering Elective (3): Select 3 credits from engineering courses other than CBE prefix; requires advisor approval. These courses are typically at a 200 level or higher. 6. Engl 289 may be taken in the semester following completion of 64 credits. 7. Optional emphasis in ChE: The academic advisor recommends and approves courses to take if students are interested in an emphasis in one of these areas: biochemical engineering, energy technology, environmental engineering, petroleum engineering, or advanced materials (nano materials, polymers, ceramics, materials processing, corrosion, or solid state/semi-conductors).
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