

## Chemical and Biomolecular Engineering Catalog 2023

Fall 16 hours	<b>Math 132 or 141 or 147 (3-4) (QR) FA,SP,SU</b> Math 132 Prereq- Math 131 Math 141 Prereq- ACT Math 28 or SAT Math 660	<b>Chem 122(3) and 123(1) or 128 (4) (NS) FA, SP, SU</b> Prereq- Math 119; recommended background in Math 131	<b>EF 142 or 151 or 157 (4) (EI) FA, SP</b> EF 142 Prereq- EF 141 with C- or better and Math 131 EF 142 Coreq- Math 132 EF 151 Coreq- 141/147 or higher and EF 105 or COSC 101 or CS 102	<b>EF 105 (1) FA, SP</b> Coreq- EF 151 or 157	<b>English 101 or 131 (3) FA, SP, SU</b> 101 Standard; 131 English as Second Language
	<b>Math 142 or 148 (4) (QR) FA, SP, SU</b> Prereq- Math 132 or 141 or 147	<b>Chem 132(3) and 133(1) or 138 (4) (NS) FA, SP, SU</b> Prereq- Chem 122 and 123 or 128	<b>EF 152 or 158 (4) (NS and EI) FA, SP, SU</b> Prereq- EF 142/151/157 with C or higher Coreq- Math 142 or 148	<b>English 102 or 112 or 298 or 132 (3) FA, SP, SU</b> 102 Prereq 101; 112 Prereq is AP 101 and Test Scores; 298 Prereq University Honors only; 132 Prereq 131 ESL	
Fall 17 hours	<b>Math 231 or 237 (3) FA, SP, SU</b> Prereq- Math 142 or 148	<b>CBE 201 (4) FA, SU</b> Prereq- EF 152/158 & Chem 132 & 133 or 138 Coreq- Math 231	<b>CBE 235 (3) FA</b> Prereq- EF 152 or 158 and Chem 132 and 133 or 138	<b>Chem 210 (3) AND 219 (1) FA, SP</b> Prereq- Chem 132 and 133 or 138	<b>Vol Core (3) FA, SP, SU</b> Social Science (SS)
	<b>Math 241 or 247 (4) FA, SP, SU</b> Prereq- Math 142 or 148	<b>CBE 240 (4) SP</b> Prereq- EF 152/158 & Chem 132 & 133 or 138 Coreq- Math 241 or 247	<b>CBE 250 (4) SP, SU</b> Prereq- EF 152/158 & Chem 132 & 133 or 138 Coreq- Math 241 or 247	<b>Physics 231 (3) FA, SP, SU</b> Prereq- Phys 135 or EF 151 and 152 Coreq- Math 142 or 148	<b>Vol Core (3) FA, SP, SU</b> Expanded Perspectives- choose from AH, AAH, GCUS, GCI, or SS
Fall 17 hours	<b>Chemistry 260 or 268 (3) FA, SP, SU</b> Prereq- Chemistry 132 and 133 or 138	<b>CBE 301 (4) FA</b> Prereq- CBE 201, 240, and 250 or consent of instructor	<b>CBE 350 (4) FA</b> Prereq- CBE 201, 240 and 250 Coreq- CBE 301	<b>Vol Core (3) FA, SP, SU</b> Arts and Humanities (AH)	<b>Vol Core (3) FA, SP, SU</b> Global Citizenship United States (GCUS)
	<b>CBE 320 (3) (OC) SP</b> Prereq- CBE 201, 240, and 250 Coreq- CBE 301 and 350	<b>CBE 340 (3) SP, SU</b> Prereq- CBE 201, 240 and 250	<b>CBE 360 (3) SP, SU</b> Prereq- CBE 201, 240 and 250 Coreq- Math 231	<b>Bio Option I**(3) FA, SP, SU</b>	<b>Tech. Elective (3) FA, SP, SU</b> Petition required in advance See note below***
Fall 16 hours	<b>CBE 445 (3) FA</b> Prereq- CBE 340 and 360	<b>CBE 480 (4) FA</b> Prereq- CBE 340 and 360 and Chem. 360 or 368; Coreq- CBE 445	<b>CBE 415 (WC and EI) (3) FA</b> Prereq- CBE 340 and 360; English 102, 112, 132, or 298 Coreq- CBE 301 and 350; and CBE major	<b>Tech. Elective*** (3) FA, SP, SU</b> Petition required in advance	<b>Vol Core (3) FA, SP, SU</b> Expanded Perspectives- choose from AH, AAH, GCUS, GCI, or SS
	<b>CBE 488 or 490 (3) SP (AOC)</b> Prereq- CBE 445 and 480	<b>Chem Option I *(3) FA, SP, SU</b>	<b>Tech. Elective*** (3) FA, SP, SU</b> Petition required in advance	<b>Tech. Elective*** (2) FA, SP, SU</b> Petition required in advance	<b>Vol Core (3) FA, SP, SU</b> Global Citizenship International (GCI)

\* **Chem Option I:** Any 200 level or above BCMB courses; any 200-level or above CHEM courses; Environmental Engineering 554, 562; MSE 201/207; MSE 340/347; MSE 360/367; any 200-level or above MICR courses.

\*\* **Biology Option I:** BCMB 230, BCMB 311, BCMB 321, BCMB 401, BCMB 402, BCMB 412, BCMB 415; BIOL 220/229, BIOL 240, BIOL 260/269; BIO 280; MICR 210, MICR 321, MICR 329.

\*\*\* One technical elective must be a chemical and biomolecular engineering course, with the exclusion of CBE 457. MSE 201 or 207 can be used as technical elective, if not used to satisfy Chem Option 1.

### Progression to Upper Division

Progression of students in the Department of Chemical and Biomolecular Engineering to departmental courses numbered 310 and above is competitive and is based on capacity. Factors considered include overall grade point average, performance in selected lower-division courses, and evidence of satisfactory and orderly progress through the prescribed curriculum.

### Upper-Division Status

A lower-division student must apply for progression to upper division status after completing CBE 201, CBE 235, CBE 240, and CBE 250 with a grade of C- or better in each course and an overall GPA of 2.3 or better. Grades of C- or better in these four courses are required for graduation.

### Provisional Status

Students who have completed CBE 201, CBE 235, CBE 240, and CBE 250 with an overall GPA of at least 2.3 may apply for provisional status. Any student granted provisional status must retake the 200 level CBE course or courses in which a grade less than C- was earned and achieve a C- or better to be admitted to full upper-division status. Grades of C- or better in these four courses are required for graduation. The granting of provisional upper-division status is based on availability of space in the departmental programs after upper-division status students have been accommodated. Provisional students are required to demonstrate the ability to perform satisfactorily in upper-division courses by completing a total of seven departmental courses with a grade of C or better in each course (including the four required for upper-division status). Permission to continue with upper-division classes depends on this minimum level of performance.

Any student with an overall GPA below 2.1 will not be admitted to upper-division chemical and biomolecular engineering courses. Students who have not been admitted to upper-division or provisional status will be dropped from upper-division departmental classes.

Students also have opportunities for an Honors Concentration. See the Undergraduate Catalog for details and requirements.