CHEMICAL ENGINEERING, BS

for the degree of Bachelor of Science Major in Chemical Engineering

The schedule that follows is illustrative, showing the typical sequence in which courses would be taken by a student with no college course credit already earned and who intends to graduate in four years. Each individual's case may vary, but the position of required named courses is generally indicative of the order in which they should be taken. The first three semesters of the Suggested Sequence is the same for all chemical engineering students. The fifth through eights semesters vary with the area of concentration chosen. Refer to the appropriate sequence continuation below.

First Year

First Semester	Hours	Second Semester	Hours
CHEM 202[1]	3	CHBE 121[2]	1
CHEM 203	2	CHEM 204	3
ENG 100[2]	0	CHEM 205	2
MATH 221[3]	4	CS 101	3
RHET 105	4	MATH 231	3
Elective in Social Sciences or Humanities[4,5]	3	PHYS 211[6]	4
	16		**16**

Second Year

First Semester	Hours
CHBE 221	3
CHEM 236	4
CHEM 237	2
MATH 241	4
PHYS 212[6]	4
	17

Total Hours 49

Major in Chemical Engineering

For the Concentration in Biomolecular Engineering, see below (p. 2)

Second Year

First Semester	Hours	Second Semester	Hours
Second Year First Semester course information is above in the Suggested Sequence that is common for all students	17	CHBE 321	4
		CHEM 436 or MCB 450	3
		MATH 285[7a]	3
		MATH 415	3
		PHYS 214[6]	2
		Elective in Social Sciences or Humanities or Technical Elective[4,5,8a]	3
	17		**18**

Third Year

First Semester	Hours	Second Semester	Hours
CHBE 421	4	CHBE 422	4
CHEM 315[9]	2	CHBE 424	3
CHEM 420	2	IE 300	3
CHEM 442	4	Elective in Social Sciences or Humanities or Technical Elective[4,5,8a]	7

Elective in Social Sciences or Humanities or Technical Elective[4,5,8a]	3		
	15		**17**

Fourth Year

First Semester	Hours	Second Semester	Hours
CHBE 430[10,11]	4	CHBE 431[10,11]	4
CHBE 440	3	Elective in Social Sciences or Humanities or Technical Elective[4,5,8a]	10
Elective in Social Sciences or Humanities or Technical Elective[4,5,8a]	9		
	16		**14**

Total Hours 97

Concentration in Biomolecular Engineering

Second Year

First Semester	Hours	Second Semester	Hours
Second Year First Semester course information is above in the Suggested Sequence that is common for all students	17	CHBE 321	4
		MCB 450	3
		MATH 285[7b]	3
		MATH 415	3
		PHYS 214[6]	2
		Elective in Social Sciences or Humanities or Technical Elective[4,5,8a]	3
	17		**18**

Third Year

First Semester	Hours	Second Semester	Hours
CHBE 421	4	CHBE 422	4
CHEM 315	2	CHBE 424	3
CHEM 420	2	IE 300	3
CHEM 442	4	Elective in Social Sciences or Humanities or Technical Elective[4,5,8a]	7
Elective in Social Sciences or Humanities or Technical Elective[4,5,8a]	3		
	15		**17**

Fourth Year

First Semester	Hours	Second Semester	Hours
CHBE 430[10,11]	4	CHBE 431[10,11]	4
CHBE 440	3	Elective in Social Sciences or Humanities or Technical Elective[4,5,8a]	10
Elective in Social Sciences or Humanities or Technical Elective[4,5,8a]	9		
	16		**14**

Total Hours 97

1

Students who do not place into CHEM 202, or who do not satisfy the mathematics prerequisite for CHEM 202, may substitute the sequence CHEM 102, CHEM 103, CHEM 104, CHEM 105, CHEM 222, and CHEM 223 for CHEM 202, CHEM 203, CHEM 204, and CHEM 205.

2

For students entering the curriculum after the freshman year, 1 additional hr of credit from the list of approved engineering technical electives (List 1) may be substituted in place of CHBE 121. The ENG 100 requirement will be waived. Under no circumstances will these requirements be waived for students who are in the chemical engineering curriculum during their freshman year.

3

MATH 220 may be substituted, with four of the five credit hours applying toward the degree. MATH 220 is appropriate for students with no background in calculus.

4

At least 16 hours must be taken. All Campus General Education requirements must be satisfied, including those in approved course work in the Humanities/Arts, Social/Behavioral Sciences, and Cultural Studies, including the Western, Non-Western and/or U.S. Minorities components. The requirements for the Campus General Education categories Natural Sciences/Technology, Quantitative Reasoning I and II, Composition I, and Advanced Composition are fulfilled through required course work in the curriculum.

5

Three semesters of college credit in one foreign language is required. Three years of high school credit in one foreign language are equivalent to three semesters of college credit and satisfy the requirement.

6

Under no circumstances will PHYS 101-PHYS 102 be accepted as a substitute for any part of the Physics sequence.

7a

MATH 441 may be substituted for MATH 285. MATH 286 may be substituted for MATH 285.

7b

MATH 441 may be substituted for MATH 285. MATH 286 may be substituted for MATH 285.

8a

At least 19 hours must be selected from the departmentally approved List of Approved Chemical Engineering Technical Electives *(*http://chbe.illinois.edu/wp-content/uploads/2015/11/Technical.Electives.Current.pdf*), satisfying these distribution requirements:*
a) 6 hours must be 400-level ChBE courses, with not more than 3 hours being CHBE 497 or 499.
b) 3 hours any 400-level course from List 1.
c) 6 hours any courses from List 1.
d) 4 hours any 400-level courses from List 2.
A maximum of 10 total hours of undergraduate research may be counted toward Technical Elective credit. The List of Approved Chemical Engineering Technical Electives may be obtained in 99 RAL or from the department Web site. *(*http://chbe.illinois.edu/undergraduate/explore-chbe-at-illinois/curriculum-academic-advising/*)*

8b

At least 19 hours must be selected from the departmentally approved List of Approved Biomolecular Engineering Technical Electives Categories *(*http://chbe.illinois.edu/wp-content/uploads/2015/11/Technical.Electives.Current.pdf*), satisfying these distribution requirements:*
a) 9 hours must be from Category A
b) 6 hours must be from Category B
c) 4 hours must be 400-level courses from List 2.
A maximum of 3 hours from Category A may be undergraduate research credit. A maximum of 9 total hours of undergraduate research may be counted toward Technical Elective credit. The List of Approved Biomolecular Engineering Technical Electives may be obtained in Room 99 RAL or from the department Web site. *(*http://chbe.illinois.edu/undergraduate/explore-chbe-at-illinois/curriculum-academic-advising/*)*

9

Students must register in one of the Chemical Engineering-specific CHEM 315 lab sections.

10

Enrollment in CHBE 430 is limited. Thus CHBE 430 may need to be taken in the second semester and CHBE 431 and/or additional electives taken in the first semester instead. Students in their final semester will have priority for getting into CHBE 430 and CHBE 431.

11

The sequence CHBE 430 and CHBE 431 satisfies the General Education Advanced Composition requirement.