

SUGGESTED FOUR-YEAR PROGRAM IN CHEMICAL ENGINEERING

For students entering as freshmen before Fall 2003.

A total of 129 hours of credit, exclusive of basic military training, is required for graduation. A typical program including all of the required courses and electives is shown below. Individual students may, to some extent, vary the order in which certain courses are taken in order to suit their individual needs. However, care must be taken in scheduling to insure that course prerequisites are met. You are also warned that many required chemical engineering courses are offered only once a year. Failure to take such courses at the appropriate time may delay your graduation by an entire year. **A more detailed statement of graduation requirements can be found in the handout "Checklist for Students in Chemical Engineering," available in 209 RAL.**

College rules state that all students are expected to complete their degree in no more than ten semesters, but may have an eleventh semester when necessary. However, the rules also state that in some academic areas the extension beyond ten semesters may not be allowed because of crowded program conditions. The chemical engineering program is currently extremely crowded. College rules also provide that no student will be permitted to register for more than ten semesters unless there are truly extenuating circumstances.

Students in the curriculum of chemical engineering must maintain a 2.500 general average, excluding military training, and based on UIUC work only, in order to be accepted by the department as junior or seniors. Students who do not meet this minimum performance standard will be required to transfer out of the chemical engineering curriculum.

FIRST YEAR

Hours	FIRST SEMESTER
3	CHEM 202 ¹ (107) Accelerated Chemistry I
1	CHEM 203 (109) Accelerated Chemistry Lab I
5	MATH 220 (120) Calculus and Analytical Geometry I
4	RHET 105 or 108 Composition
3	Elective ^{2,3}
16	Total

Hours	SECOND SEMESTER
3	CHEM 204 (108) Accelerated Chemistry II
2	CHEM 205 (110) Accelerated Chemistry Lab II
3	MATH 230 (130) Calculus and Analytic Geometry II
3	CS 101 Introduction to Computing for Eng & Science
4	PHYCS 211 (111) Univ Physics, Mechanics
1	*CHBE 121 (161) The Chemical Engineering Profession
16	Total

SECOND YEAR

Hours	FIRST SEMESTER
3	CHBE 221 (261) Principles of Chemical Engineering
4	CHEM 236 Fundamental Organic Chemistry I
2	CHEM 237 Structure and Synthesis
3	MATH 242 ⁴ Calculus of Several Variables
4	PHYCS 212 (112) Univ Physics, Electricity and Magnetism
16	Total

Hours	SECOND SEMESTER
4	CHBE 321 (370) Chemical Engineering Thermodynamics
3	CHEM 436 (336) ⁵ Fundamental Organic Chemistry II
2	MATH 225 ⁶ Introductory Matrix Theory
2	PHYCS 214 (114) Univ Physics, Waves and Quantum Physics
3	MATH 385 (285) ⁷ Differential Equations and Orthogonal Functions
3	Electives ^{2,3}
17	Total

THIRD YEAR

Hours	FIRST SEMESTER
4	CHBE 421 (371) Momentum and Heat Transfer
4	CHEM 442 (342) Physical Chemistry I
2	CHEM 315 (319) Instrumental Characterization of Chemical Systems Laboratory
2	CHEM 420 (321) Instrumental Characterization of Chemical Systems
3	Electives ^{2,3}
15	Total

Hours	SECOND SEMESTER
4	CHBE 422 (373) Mass Transfer Operations
4	CHEM 444 (344) Physical Chemistry II
3	CHBE 424 (381) Chemical Rate Processes and Reactor Design
6	Electives ^{2,3}
17	Total

FOURTH YEAR

Hours	FIRST SEMESTER
4	CHBE 440 (389) Chemical Process Control and Dynamics
4	*CHBE 430 (374) Chemical Engineering Laboratory
9	Electives ^{2,3}
17	Total

Hours	SECOND SEMESTER
4	CHBE 431 (377) Synthesis and Design of Chemical Systems
11	Electives ^{2,3}
15	Total

***NOTE:** CHBE is now used to denote Chemical & Biomolecular Engineering, instead of CH E.

***NOTE:** Enrollment in CHBE 430 is limited. Thus you may need to take CHBE 430 in the Second Semester and instead take CHBE 431 and/or additional electives in the First Semester. Students in their final semester will have priority for getting into CHE 430 and CHBE 431.

NOTES:

1. Students who do not place into CHEM 202 (107), or who do not satisfy the mathematics prerequisite for CHEM 202 (107), may substitute the sequence CHEM 102, 103, 104, 105, 223 and 224 for CHEM 202, 203, 204, & 205 (107, 108, 109, & 110 respectively)
2. Sixteen hours of approved general education electives are required. This must include at least six hours in social perspectives or behavioral sciences and at least six hours in literature and the arts or historical and philosophical perspectives. A current list of approved courses that may be used to satisfy this requirement is available in Room 209 RAL. If you have more than 6 hours in either category, the excess will be counted as other Humanities or Social Science hours. Students entering college in Fall 1995 or later must satisfy the distribution requirements in Western and Non-Western Cultures. See General Education Handout for details.
3. Students must take at least 19 hours of approved technical electives in areas of engineering science. A current list of courses that may be used to satisfy this requirement in Room 209 RAL. Distribution requirements for these 19 hours are:
 - a) At least 9 hours must be in 400-level courses (or CHBE 499).
 - b) Of those 9, at least 6 hours must be in chemical engineering (400-level courses and CHE 499).
 - c) Of those 6, at least 3 hours must be in 400-level chemical engineering courses (*i.e.*, not in CHBE 499).
4. MATH 243 (4 hours) may be substituted for MATH 242 (3 hours). The additional credit hour earned for MATH 243 will be counted as a technical elective hour
5. MCB 350 (450) may be substituted for CHEM 436 (336).
6. MATH 415 (315) (3 hours) may be substituted for MATH 225 (2 hours). The additional credit hour earned for MATH 415 will be counted as 400-level technical elective hour. Students electing to take MATH 415 in place of MATH 225 should be sure they meet the prerequisites for MATH 415.
7. MATH 441 (341) may be substituted for MATH 385 (285). MATH 386 (286) (4 hours) may be substituted for MATH 385 (285) (3 hours). The additional credit hour earned for MATH 386 will be counted as a technical elective hour.
8. Starting Spring 2000, three years of high school credit or 3 semesters of college credit in one foreign language is required.
9. Students in the **ChE/FS Program** will pursue a M.S. degree in Food Science after graduation from CHBE department. They need to take FSHN 202 as Free Elective and MCB 300 (200) and 301 (201) as Technical Electives. FSHN 414 (314) and 415 (315) that are required courses for the M.S. degree. These courses are recommended to be taken as Technical Electives while student is still in the CHBE Department. If a student chooses to do this, however, he/she needs to take other courses from the list specified in the ChE/FS Program to satisfy the requirement for the M.S. degree. ChE/FS Program booklet can be picked up from 209 RAL.