

Chemical Engineering

128 credit hours total

YEAR 1		YEAR 2		YEAR 3		YEAR 4	
FALL	SPRING	FALL	SPRING	FALL	SPRING	FALL	SPRING
*MATH 220 (4) Analytic Geometry and Calculus I KSC-3	*MATH 221 (4) Analytic Geometry and Calculus II PR: MATH 220 ≥ C	MATH 222 (4) Analytic Geometry and Calculus III PR: MATH 221 ≥ C	MATH 340 (4) Elementary Differential Equations PR: MATH 221 ≥ C	•CHE 530 (3) Transport Phenomena I PR: CHE 320 ≥ C PR: MATH 340 ≥ C	•CHE 531 (3) Transport Phenomena II PR: CHE 530 PR/CO: CHE 416	•CHE 570 (3) Chemical Engineering Systems Design I PR/CO: CHE 550, 560	•CHE 571 (3) Chemical Engineering Systems Design II PR: CHE 550, 560, 570 PR/CO: CHE 561
CHM 210 (4) Chemistry I	CHM 230 (4) Chemistry II PR: CHM 210	CHM 371 (4) Chemical Analysis PR: CHM 230	CHM 531 (3) Organic Chemistry I PR: CHM 230 or CHM 250	•CHE 521 (3) Chemical Engineering Thermodynamics II PR: CHE 520 PR/CO: CHE 416	•CHE 535 (3) Transport Phenomena Laboratory PR/CO: CHE 531	•CHE 550 (3) Chemical Reaction Engineering PR: CHE 521, 531	•CHE 542 (3) Unit Operations Laboratory PR: CHE 535, 550, 560 PR/CO: CHE 561
*ENGL 100 (3) Expository Writing I KSC-1	*ENGL 200 (3) Expository Writing II KSC-1 PR: ENGL 100	*PHYS 213 (5) Engineering Physics I KSC-4 PR/CO: MATH 220	PHYS 214 (5) Engineering Physics II PR: PHYS 213 PR/CO: MATH 221	▲ Elective (3) Chemistry/Biochemistry/Biology	•CHE 560 (3) Separational Process Design PR: CHE 521 PR/CO: CHE 531	•CHE 565 (3) Health and Safety in Chemical Engineering PR/CO: CHE 570	•CHE 561 (3) Chemical Process Dynamics and Control PR: CHE 550, 416
DEN 160 (1) College of Engineering Orientation	*COMM 106 (3) Public Speaking KSC-2	CHE 320 (3) Chemical Process Analysis PR/CO: CHM 230 or CHM 250 PR/CO: MATH 222	•CHE 520 (2) Chemical Engineering Thermodynamics I PR: CHE 320 ≥ C PR/CO: MATH 340	▲ Elective (2) Advanced Laboratory Experience	▲ Elective (3) Chemistry/Biochemistry/Biology	▲ Elective (3) Engineering Topics	▲ Elective (3) Chemical Engineering
DEN 161 (1) Engineering Problem Solving PR/CO: MATH 150	*Elective (3) Arts and Humanities KSC-6	CHE 416 (3) Computational Techniques in Chemical Engineering PR: CHE 320		▲ Elective (3) Materials	*Elective (3) Institutional KSC-7	*Elective (3) Social and Behavioral Sciences KSC-5	*Elective (3) Institutional KSC-7
*Elective (3) Arts and Humanities KSC-6				*Elective (3) Social and Behavioral Sciences KSC-5			
CHE 015 (0) (16 credit hours)	CHE 015 (0) (17 credit hours)	CHE 015 (0) (17 credit hours)	CHE 015 (0) (16 credit hours)	CHE 015 (0) (17 credit hours)	CHE 015 (0) (15 credit hours)	CHE 015 (0) (15 credit hours)	CHE 015 (0) (15 credit hours)

KEY

- = Prerequisite for another course
- PR = Prerequisite requirement
- PR/CO = Prerequisite or concurrent requirement
- * = K-State Core (KSC) course
- ▲ = See department approved electives
- = Only offered in the semester shown

Chemical Engineering Curriculum Notes

A minimum cumulative GPA of 2.00 (a C average) for all chemical engineering courses 400 level and above, including chemical engineering elective courses, is required for graduation.

A maximum of two 'D' grades in chemical engineering courses 400 level and above is allowed.

Of the 47 credit hours of required chemical engineering and chemical engineering elective courses, at least half of these credit hours must be completed at Kansas State University.

Total credit for undergraduate research (CHE 497 and/or CHE 499) applicable to the degree is limited to a maximum of six (6) credit hours.

Honors Chemistry I (CHM 220) and Honors Chemistry II (CHM 250) may be taken instead of CHM 210, CHM 230 and CHM 371. If this option is elected, two additional credit hours of technical electives are to be selected.

Technical Electives

The departmental requirements below must be satisfied.

All electives must be on the lists approved by the department head and must support the program educational objectives and student outcomes of the chemical engineering program.

Seventeen credit hours of approved technical electives are required. These electives will include:

- Two Chemistry/Biochemistry/Biology courses, one of which must be either CHM 585 OR CHM 595 (6 credit hours in total).
- Advanced Laboratory Experience elective (2 credit hours).
- Engineering Topics elective (3 credit hours).
- Chemical Engineering elective (3 credit hours).
- Engineering Materials elective (3 credit hours).

A list of approved Chemistry/Biology/Biochemistry electives, Advanced Laboratory Experience electives, Chemical Engineering electives and Engineering Topics electives may be found on the department website, che.k-state.edu/student-success/advising.

Students must take either CHE 354, CHE 355, and CHE 356 OR Biomaterials (BME 430/CHE 580) to satisfy the Materials Elective.

Students who satisfy all or part of Kansas State Core Institutional Electives (Requirement #7) with courses that satisfy other degree requirements may use additional unrestricted electives to meet the degree requirement of 128 credit hours.

K-State Core

The K-State Core (KSC) is the university's version of the systemwide general education framework established by the Kansas Board of Regents.

KSC requirement 1 – English (6 hours)

KSC requirement 2 – Communications (3 hours)

KSC requirement 3 – Math and Statistics (3 hours)

KSC requirement 4 – Natural and Physical Sciences (4-5 hours)

KSC requirement 5* – Social and Behavioral Sciences (6 hours)

KSC requirement 6* – Arts and Humanities (6 hours)

KSC requirement 7 – Institutional Electives (6 hours)

To view course lists for each requirement, visit k-state.edu/provost/kstate-core.

**Requires two courses from two different subject areas.*