

Bachelor of Science in Chemical Engineering - Fall 2019

Year 1		Fall Semester		Spring Semester		
C&PE 111	Intro to the profession I	1		C&PE 112	Intro to the profession II	1
CHEM 170	Chem for Chemical Sciences	5		CHEM 175	Chem for Chem Sciences II	5
ENGL 101	Composition	3		ENGL 102	Composition & Lit	3
MATH 125	Calculus I	4		MATH 126	Calculus II	4
KU CORE	GE3H, GE3S, AE41, AE42	3		PHSX 210	General Physics I for Engineers	3
				PHSX 216	Physics I lab	1
			Hours this semester: 16			Hours this semester: 17

Year 2		Fall Semester		Spring Semester		
C&PE 211	Material & Energy Balances	4		C&PE 221	Basic Thermodynamics	3
CHEM 330	Organic Chemistry I	3		C&PE 325	Numerical Methods	3
CHEM 331	Organic Chemistry I Lab	2		MATH 127	Calculus III	4
MATH 220	Differential Equations	3		PHSX 236	General Physics II Lab	1
MATH 290	Linear Algebra	2		ENGR ELECT	1st ENGR Elective	3
PHSX 212	General Physics II	3		ELECT ***	1st Adv. Science Elective	3
			Hours this semester: 17			Hours this semester: 17

Year 3		Fall Semester		Spring Semester		
C&PE 511	Momentum Transfer	3		C&PE 522	Econ Appraisal	2
C&PE 512	Process Thermo	3		C&PE 525	Heat & Mass Transfer	4
CHEM 525	PCHEM for Engineers	4		C&PE 524	Kinetics & Reactor Design	3
ENGR ELECT	2nd ENGR Elective	3		ELECT ***	2nd Adv. Science Elective	3
KU CORE	GE3H, GE3S, AE41, AE42	3		KU CORE	GE3H, GE3S, AE41, AE42	3
			Hours this semester: 16			Hours this semester: 15

Year 4		Fall Semester		Spring Semester		
C&PE 611	Design of Unit Operations	3		C&PE 613	ChemE Design	4
C&PE 615	Process Dynamics & Control	3		C&PE 624	Process Safety & Sustainability	3
C&PE 616	ChemE Lab I	4		C&PE 626	ChemE Lab II	3
ENGR ELECT	3rd ENGR Elective	3		ENGR ELECT	4th ENGR Elective	3
KU CORE	GE3H, GE3S, AE41, AE42	3				
			Hours this semester: 16			Hours this semester: 13

Total Number of Hours 127

Below is a checklist of courses required for completion of the BS degree in Chemical Engineering. A total of 127 hours is required for the degree including completion of the KU CORE requirements.

<input type="checkbox"/>	C&PE	111	Intro to the profession I	1					
<input type="checkbox"/>	C&PE	112	Intro to the profession II	1	<input type="checkbox"/>	ENGL	101	Composition	3
<input type="checkbox"/>	C&PE	211	Material & Energy Balances	4	<input type="checkbox"/>	ENGL	102	Composition & Lit	3
<input type="checkbox"/>	C&PE	221	Basic Thermodynamics	3					
<input type="checkbox"/>	C&PE	325	Numerical Methods	3	0	<input type="checkbox"/>	KU CORE	Humanities G3H	3
<input type="checkbox"/>	C&PE	511	Momentum Transfer	3	<input type="checkbox"/>	KU CORE		Social Science G3S	3
<input type="checkbox"/>	C&PE	512	Process Thermo	3	<input type="checkbox"/>	KU CORE		AE 4.1	3
<input type="checkbox"/>	C&PE	522	Econ Appraisal	2	<input type="checkbox"/>	KU CORE		AE 4.2	3
<input type="checkbox"/>	C&PE	524	Kinetics & Reactor Design	3					
<input type="checkbox"/>	C&PE	525	Heat & Mass Transfer	4	<input type="checkbox"/>	CHEM	170	Chem for Chemical Sciences I	5
<input type="checkbox"/>	C&PE	611	Design of Unit Operations	3	<input type="checkbox"/>	CHEM	175	Chem for Chem Sciences II	5
<input type="checkbox"/>	C&PE	613	ChemE Design	4	<input type="checkbox"/>	CHEM	330	Organic Chemistry I	3
<input type="checkbox"/>	C&PE	615	Process Dynamics & Control	3	<input type="checkbox"/>	CHEM	331	Organic Chemistry I Lab	2
<input type="checkbox"/>	C&PE	616	ChemE Lab I	4	<input type="checkbox"/>	CHEM	525	PCHEM for Engineers	4
<input type="checkbox"/>	C&PE	624	Process Safety & Sustainability	3					
<input type="checkbox"/>	C&PE	626	ChemE Lab II	3	<input type="checkbox"/>	MATH	125	Calculus I	4
					<input type="checkbox"/>	MATH	126	Calculus II	4
					<input type="checkbox"/>	MATH	127	Calculus III	4
<input type="checkbox"/>	ENGR	ELECT	1st ENGR Elective	3	<input type="checkbox"/>	MATH	220	Differential Equations	3
<input type="checkbox"/>	ENGR	ELECT	2nd ENGR Elective	3	<input type="checkbox"/>	MATH	290	Linear Algebra	2
<input type="checkbox"/>	ENGR	ELECT	3rd ENGR Elective	3					
<input type="checkbox"/>	ENGR	ELECT	4th ENGR Elective	3	<input type="checkbox"/>	PHSX	210	General Physics I	3
					<input type="checkbox"/>	PHSX	216	Physics I lab	1
<input type="checkbox"/>	ELECT	***	1st Adv. Science Elective	3	<input type="checkbox"/>	PHSX	212	General Physics II	3
<input type="checkbox"/>	ELECT	***	2nd Adv. Science Elective	3	<input type="checkbox"/>	PHSX	236	Physics 2 lab	1

- Generally, students that transfer into the program do not go back and take C&PE 111. However, they need to make up the hours with 1 additional hour of engineering elective and 1 additional hour of MSEHS (Math, Science, Engineering, Humanities, or Social Science).
- Students who are exempt from ENGL 101 do not need to make up the hours with another course.
- CHEM 130 and 135 are acceptable substitutes for CHEM 170 and 175.
- HSES and other activity courses do not count for hours towards graduation. Students will satisfy KU CORE Goal 1.1, 1.2, 2.1, 2.2, 3N, 5, and 6 with completion of the Math, Science, Communication, English, and Engineering courses required for the degree. Students must select approved courses to satisfy the Goal 3H, 3S, 4.1, 4.2 requirements. Students will not graduate without meeting the requirements for the KU CORE.
- C&PE courses are only offered 1 time a year in the semester in which they are shown. Failure to take the Math, Science, English, and C&PE courses in the order shown may delay graduation by at least 1 year.
- Chemical engineering students must earn a cumulative 2.0 GPA in C&PE 211, C&PE 221, and C&PE 325 in order to progress to C&PE 511, C&PE 512, C&PE 524, or C&PE 525. The cumulative GPA is calculated using the highest grade earned in each course.
- Chemical engineering students must earn a cumulative 2.0 GPA in C&PE 511, C&PE 512, C&PE 522, C&PE 524, C&PE 525 in order to progress to C&PE 611, C&PE 613, C&PE 615, C&PE 616, C&PE 624, or C&PE 626. The cumulative GPA is calculated using the highest grade earned in each course.
- Students who fulfill Goal 4.2 by international status or an experience need to make up the 3 hours with 3 hours of MSEHS (Math, Science, Engineering, Humanities, or Social Science). Students planning on completing an emphasis (Biomedical, Environmental, Materials Science, Petroleum, or Premedical) may have specific advanced science and engineering elective courses that are required for completion of the emphasis. Please see the emphasis pages for a detailed description of the specific requirements.

Below are the specific requirements for different emphases available in chemical engineering. The courses listed are required for completion of the emphasis. The column next to the course number indicates if the course will also count towards an advanced science or engineering elective requirement for the B.S. degree in Chemical Engineering.

Biomed Required				
<input type="checkbox"/>	BIOL	150	Molecular Biol (1st Adv. Science Elective)	4
<input type="checkbox"/>	BIOL	600	Biochemistry (2nd Adv. Science Elective)	3
	or	546	Mamm Physiology (2nd Adv. Science Elective)	3
<input type="checkbox"/>	C&PE	656	Intro to Biomed Engin (ENGR ELECT)	3

Premed Required				
<input type="checkbox"/>	BIOL	150	Molecular Biol (1st Adv. Science Elective)	4
<input type="checkbox"/>	BIOL	152	Organismal Biol (2nd Adv. Science Elective)	4
<input type="checkbox"/>	CHEM	335	Organic Chemistry II	3
<input type="checkbox"/>	BIOL	600	Biochemistry	3
Premed recommended				
<input type="checkbox"/>	C&PE	656	Intro to Biomed (ENGR ELECT)	3
<input type="checkbox"/>	PSYC	104	Intro to Psyc (Social Science G3S)	3
<input type="checkbox"/>	SOC	104	Intro to Sociology (AE 4.1)	3
<input type="checkbox"/>	BIOL	350	Genetics	3
<input type="checkbox"/>	BIOL	546	Physiology	3
<input type="checkbox"/>	BIOL	547	Physiology lab	2
<input type="checkbox"/>	BIOL	416	Cell structure and function	3

Environmental Required				
<input type="checkbox"/>	CE	477	Intro to Env Eng (1st ENGR Elective)	3
<input type="checkbox"/>	CE	5XX/7XX	Env Engr Elective (2nd ENGR Elective)	3
<input type="checkbox"/>	CE	5XX/7XX	Env Engr Elective (3rd ENGR Elective)	3
<input type="checkbox"/>	CE	5XX/7XX	Env Engr Elective (4th ENGR Elective)	3

Petroleum Required				
<input type="checkbox"/>	GEOL	101	The Way the Earth Works (1st Adv. Science Elective)	3
<input type="checkbox"/>	GEOL	103	Fundamentals Lab (2 hrs of 2nd Adv. Science Elective)	2
<input type="checkbox"/>	C&PE	327	Res 1 (1 hr - 2nd Adv. Science Elective, 3 hr ENGR ELECT)	4
<input type="checkbox"/>	C&PE	527	RES 2 (2nd ENGR ELECT)	4
<input type="checkbox"/>	C&PE	XXX	Petroleum engineering elective (3rd ENGR ELECT)	3

Material Science Required					
4 engineering electives must be selected from the following list :					
<input type="checkbox"/>	ARCE 350	<input type="checkbox"/>	CE 461	<input type="checkbox"/>	ME 306
<input type="checkbox"/>	AE 507	<input type="checkbox"/>	C&PE 655	<input type="checkbox"/>	ME 311
<input type="checkbox"/>	AE 510	<input type="checkbox"/>	C&PE 657	<input type="checkbox"/>	ME 767
<input type="checkbox"/>	CE 310	<input type="checkbox"/>	C&PE 752		
<input type="checkbox"/>	CE 412	<input type="checkbox"/>	C&PE 765		
<input type="checkbox"/>	CHEM 680, C&PE 715, BIOL 420, PHSX 600, EPHX 600 (Intro to nanotech)				
Materials Science recommended					
Choose 1 of the following to satisfy the part of the Advanced Science Elective requirement					
<input type="checkbox"/>	PHSX 313	<input type="checkbox"/>	CHEM 400/401		
<input type="checkbox"/>	BIOL 150	<input type="checkbox"/>	CHEM 635/636		
		<input type="checkbox"/>	CHEM 660		