Standard ChE Undergraduate Curriculum

The Standard Curriculum for the Bachelor of Science degree in Chemical Engineering at the University of Colorado has been designed to meet or exceed national standards for undergraduate chemical engineering curricula as published by the Accreditation Board for Engineering and Technology (ABET). The Standard Curriculum presented in the chart below contains courses in mathematics and the basic sciences, computing, chemical engineering, and humanities & social sciences. There are several courses shown as Elective in the chart. These are either technical or free electives (see special section on these). The elements of the Standard Curriculum are included in the specialized curricula that follow. The latter specify the elective courses in order to provide a specialization in the theme of the option.

Standard Curriculum

Freshman Fall		Freshman Spring		Sophomore Fall		Sophomore Spring	
Calc 1[6]	4	Calc 2	4	Calc 3	4	LinAlgODE	4
Chem for Eng	5	Biol Engr[5]	3	OChem 1	5	OChem 2	5
Computing	3	Phys 1	4	MatEnBal	3	PChem Engr	3
H&SS	3	Intro ChE	1	Phys 2	4	ChE Fluids	3
		H&SS	3	Phys Lab	1	H&SS	3
Total	15	Total	15	Total	17	Total	18
Junior Fall		**Junior Spring**		**Senior Fall**		**Senior Spring**	
AppData	3	ChemElect[1]	3	Design	3	Design Proj	2
ChE Heat Tfr	3	ChE Lab 1	2	ChE Lab 2	2	Control	4
WRTG[3]	3	Kinetics	3	Elective[2]	3	ChE Mat'ls[4]	3
ChE Thermo	3	ChE Sep/Mass	3	Elective[2]	3	Elective[2]	3
Elective	4	Elective[2]	3	H&SS	3	Elective[2]	3
		H&SS	3	Sr Seminar	1		
Total	16	Total	17	Total	15	Total	15

Total Credit Hours: 128

[1]**Approved Chemistry Electives**
- **Inorganic – 3**
- **InstAnaly – 3**
- **PChem2 – 3**
- **Adv Pchem – 3**
- **Biochem1 – 3**
- **Biochem2 – 3**
- **Survey Biochem – 3**
- **Biochem Lab – 4**

[2]**Six credit hours must be CHEN 3000+**
[3]**Alternates are HUEN 3100, GEEN 3000 or WRTG 3035**
[4]**CHEN 4440 or CHEN 4460**
[5]**Alternates are MCDB 1150 or EBIO 1210 and 1220**
[6]**Alternate is APPM 1340 and 1345**

The table on the following page provides the complete course numbers and titles for the shorthand notation used in the chart above.

Course Notation	Course Number	Credit Hours	Title
App Data	CHEN 3010	3	Applied Data Analysis
Biochem 1	CHEM 4711	3	General Biochemistry 1
Biochem 2	CHEM 4731	3	General Biochemistry 2
Biochem Lab	CHEM 4761	4	Biochemistry Laboratory
Biol Engr	CHEN 2810	3	Biology for Engineers
Calc 1	APPM 1350	4	Calculus 1 for Engineers
Calc 2	APPM 1360	4	Calculus 2 for Engineers
Calc 3	APPM 2350	4	Calculus 3 for Engineers
ChE Lab 1	CHEN 3130	2	Chemical Engineering Laboratory 1
ChE Lab 2	CHEN 4130	2	Chemical Engineering Laboratory 2
ChE Matls	CHEN 4440	3	Chemical Engineering Materials
ChE Fluids	CHEN 3200	3	Chemical Engineering Fluid Mechanics
ChE Heat Tfr	CHEN 3210	3	Chemical Engineering Heat Transfer
ChE Sep/Mass	CHEN 3220	4	Chemical Engineering Separations and Mass Transfer
ChE Thermo	CHEN 3320	3	Chemical Engineering Thermodynamics
Chem	CHEN 1211 CHEM 1221	3 2	General Chemistry for Engineers General Chemistry Laboratory for Engineers
Computing	GEEN 1300	3	Introduction to Engineering Computing
Control	CHEN 4570	4	Instrumentation and Process Control
Design	CHEN 4520	3	Chemical Process Synthesis
Design Proj	CHEN 4530	2	Chemical Engineering Design Project
Elective	various	≈3	Technical or free elective course See Technical Elective section of this Guide
H&SS	various	≈3	Humanities and Social Science course see H&SS section of this Guide
	HUEN 3100	3	Humanities for Engineers 1
	HUEN 3200	3	Humanities for Engineers 2
Inorganic	CHEM 4011	3	Modern Inorganic Chemistry
InstAnaly	CHEM 4171	3	Instrumental Analysis
IntroChE	CHEN 1300	1	Introduction to Chemical Engineering
Kinetics	CHEN 4330	3	Chemical Engineering Reaction Kinetics
LinAlgODE	APPM 2360	4	Introduction to Linear Algebra and Differential Equations
MatEnBal	CHEN 2120	3	Chemical Engineering Material and Energy Balances
OChem 1	CHEM 3311 CHEM 3321	4 1	Organic Chemistry 1 Laboratory in Organic Chemistry 1
OChem 2	CHEM 3331 CHEM 3341	4 1	Organic Chemistry 2 Laboratory in Organic Chemistry 2
PChem Engr	CHEM 4521	3	Physical Chemistry for Engineers
PChem 2	CHEM 4531	3	Physical Chemistry 2
Phys 1	PHYS 1110	4	General Physics 1
Phys 2	PHYS 1120	4	General Physics 2
Phys Lab	PHYS 1140	1	Experimental Physics 1
Poly Engr	CHEN 4460	3	Polymer Engineering
Sr Seminar	CHEN 4090	1	Chemical Engineering Undergraduate Seminar
Survey Biochem	CHEM 4611	3	Survey of Biochemistry
WRTG	WRTG 3030	3	Advanced Composition: Writing on Science and Society (H&SS credit)