



FRCC (all campuses) to CU-Boulder Transfer Advising Guide for Chemical Engineering (B.S.)

[Chemical Engineering Department Website](#)

Program Overview:

Chemical Engineering is a broad and versatile discipline, which deals with the development and application of processes that change materials either chemically or physically. Chemical engineers invent, design, and operate manufacturing processes that involve the chemical transformation of raw materials into products that are of value to humanity.

Admission Requirements:

[Please see this website for more information regarding CU Engineering admission criteria](#)

FRCC Course Summary: (the following courses will apply directly to the degree)

**BOLD denotes admission requirement courses*

***denotes recommended requirement before transferring*

NOTE: Some courses may only be taught at the Boulder County campus. Please check with FRCC advisors.

Mathematics:

MAT 201*	Calculus 1	(5 credits)
MAT 202*	Calculus 2	(5 credits)
MAT 204	Calculus 3 with Engineering Applications	(5 credits)
MAT 266	Differential Equations/Linear Algebra	(4 credits)

Science:

CHE 111*	General Chemistry 1	(5 credits)
CHE 112**	General Chemistry 2	(5 credits)
PHY 211	Calc-based Physics 1	(5 credits)
PHY 212	Calc-based Physics 2	(5 credits)

***It is recommended for this major that you complete CHE 111+112 before transferring*

Engineering/Computer Science:

EGG 100	Introduction to Engineering	(1 credit – free elective)
BIO 111	General College Biology 1	(5 credits)
BIO 112	General College Biology 2	(5 credits)
<i>^BIO 111+112 = CHEN 2810 (Biology for Engineers) at CU Boulder</i>		
CHE 211	Organic Chemistry 1	(5 credits)
CHE 212	Organic Chemistry 2	(5 credits)

CHEN 1310	Engineering Computing	(3 credits)
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^this course is available through [CU Continuing Education](#) as CU Boulder online credit. If you are interested in this option, please email cjanderson@colorado.edu for more information.

Humanities and Social Sciences (H/SS):

- Up to nine (9) credit hours at the lower division (100-200) level
 - Six (6) credit hours the upper-division level – *typically taken at CU Boulder*
- Please consult our [CCCS humanities and social science list](#) when selecting these classes

Suggested Five-Year Course Plan for Chemical Engineering

This is a suggested guide of coursework only and is subject to change. Always consult with your academic advisor for graduation planning purposes.

*denotes courses that do not apply directly to degree, other than as free electives

Front Range Community College (two years)

Fall Semester 1

Course	Course Title	Credits
MAT 121	College Algebra*	4
CHE 101	Intro to Chemistry (with Lab)*	5
	Humanities/Social Science	3
	Humanities/Social Science	3
EGG 100	Intro to Engineering*	1
	Total Credits	16

Spring Semester 1

Course	Course Title	Credits
MAT 166	Pre-Calculus*	5
CHE 111	College Chemistry 1 (with lab)	5
BIO 111	General College Biology 1	5
	Total Credits	15

Fall Semester 2

Course	Course Title	Credits
MAT 201	Calculus 1	5
CHE 112	College Chemistry 2 (with lab)	5
BIO 112	General College Biology 2	5
	Total Credits	15

Spring Semester 2

Course	Course Title	Credits
MAT 202	Calculus 2	5
PHY 211	Physics 1	5
CHE 211	Organic Chemistry 1	5
	Total Credits	15

CU-Boulder (last three years)

Fall Semester 3

Course	Course Title	Credits
APPM 2350	Calculus 3	4
PHYS 1120	Physics 2	4
PHYS 1140	Experimental Physics	1
CHEM 2120	Material & Energy Balances	3
CHEM 1310	Intro to Engr. Computing	3
	Total Credits	15

Spring Semester 3

Course	Course Title	Credits
APPM 2360	Differential Eq./Lin. Algebra	4
CHEM 3331	Organic Chemistry 2	4
CHEM 3341	Organic Chemistry 2 Lab	1
CHEM 4521	Physical Chem for Engr.	3
CHEM 3200	Fluid Mechanics	3
	Total Credits	15

CU-Boulder (last three years)...continued

Fall Semester 4

Course	Course Title	Credits
CHEM 3010	Applied Data Analysis	3
CHEM 3210	ChE Heat Transfer	3
CHEM 3320	ChE Thermodynamics	3
	Humanities/Social Science	3
	Engineering Writing Course	3
	Total Credits	15

Spring Semester 4

Course	Course Title	Credits
CHEM 3220	Separations & Mass Transfer	3
CHEM 4090	ChE Seminar	1
CHEM 4330	Kinetics	3
CHEM 4440	Materials	3
	Advanced Chemistry Elective	3
	UD Humanities/Social Science	3
	Total Credits	16

Fall Semester 5

Course	Course Title	Credits
CHEM 4810	ChE Lab	3
CHEM 4520	Design 1	3
	Technical Elective	3
	Technical Elective	3
	Total Credits	14

Spring Semester 5

Course	Course Title	Credits
CHEM 4530	Design 2	2
CHEM 4570	Process Control	4
	Technical Elective	3
	Technical Elective	3
	UD Humanities/Social Science	3
	Total Credits	15