



RRCC to CU-Boulder Transfer Advising Guide for Chemical Engineering (B.S.)

College of Engineering and Applied Science
[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](#)

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

**BOLD denotes admission requirement courses (only ONE science course needed for admission)*

Mathematics:

MAT 201*	Calculus 1	(5 credits)
MAT 202*	Calculus 2	(5 credits)
MAT 204	Calculus 3 with Engineering Applications	(5 credits)
MAT 261	Differential Equations	(4 credits)
MAT 255	Linear Algebra	(3 credits)

Science:

CHE 111*	General Chemistry 1	(5 credits)
CHE 112**	General Chemistry 2	(5 credits)
<i>**CU strongly recommends CHE 111 AND CHE 112 before you transfer to this major</i>		
CHE 211	Organic Chemistry 1	(5 credits)
CHE 212	Organic Chemistry 2	(5 credits)
PHY 211	Calc-based Physics 1	(5 credits)
PHY 212	Calc-based Physics 2	(5 credits)

Engineering/Computer Science:

N/A

Humanities and Social Sciences (H/SS):

- Up to nine (9) credit hours at the lower division (100-200) level
 - Six (6) credit hours at 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

Red Rocks Community College (first 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
	Total Credits	15

Spring Semester 1

Course	Course Title	Credits
MAT 122	Trigonometry*	3
CHE 111	College Chemistry 1 (with lab)	5
BIO 111	General College Biology 1	5
	Total Credits	13

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	13

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