

CHEMISTRY - CHEMICAL ENGINEERING CONCENTRATION (CHM-CE)

Department: Chemistry and Biochemistry (<https://catalog.bradley.edu/undergraduate/liberal-arts-sciences/chemistry-biochemistry/>)

This concentration is designed for students wishing to attend graduate school in chemistry, chemical engineering, biochemical engineering, or biochemistry or who plan to seek immediate employment in chemistry or an allied field.

All students must complete the Chemistry and Biochemistry Common Curriculum Requirements and Concentration Requirements (below).

Chemistry and Biochemistry Common Curriculum

Code	Title	Hours
CHM 110	General Chemistry I	3.0
CHM 111	General Chemistry I Lab	1.0
CHM 114	Chemistry of the Elements	1.0
CHM 116	General Chemistry II	3.0
CHM 117	General Chemistry II Laboratory	1.0
CHM 252	Organic Chemistry I	3.0
CHM 253	Organic Chemistry Laboratory I	2.0
CHM 256	Organic Chemistry II	3.0
CHM 257	Organic Chemistry Laboratory II	1.0
CHM 320	Quantitative Analysis	3.0
CHM 321	Quantitative Analysis Laboratory	1.0
CHM 360	Biochemistry	3.0
CHM 380	Junior Seminar in Chemistry and Biochemistry	1.0
CHM 480	Senior Seminar in Chemistry and Biochemistry	1.0
BIO 151	Molecules to Cells	3.0
Total Hours		30

Concentration Requirements

Code	Title	Hours
MTH 121	Calculus I	4.0
MTH 122	Calculus II	4.0
MTH 223	Calculus III	4.0
MTH 224	Elementary Differential Equations	3.0
PHY 110	University Physics I	4.0
PHY 201	University Physics II	4.0
CHE 301	Chemical Engineering Thermodynamics	3.0
CHE 302	Material and Energy Balances	3.0
CHE 321	Chemical Reaction Engineering	3.0
CHE 415	Transport Phenomena I	3.0
CHE 416	Transport Phenomena II	3.0
CHM 420 or CHM 520	Instrumental Analysis	4.0
CHM 436 or CHM 536	Inorganic Chemistry	3.0

CHM 470 or CHM 570	Physical Chemistry I	3.0
CHM 471 or CHM 571	Physical Chemistry Laboratory	1.0
Select a minimum of 7 hours of electives from the following:		7.0
CHM 361	Biochemistry Laboratory	
CHM 416 or CHM 516	Environmental Chemistry	
CHM 417 or CHM 517	Experimental Design Laboratory	
CHM 440 or CHM 540	Materials Chemistry	
CHM 441 or CHM 541	Materials Chemistry Laboratory	
CHM 462 or CHM 562	Protein Structure and Function	
CHM 466 or CHM 566	Intermediary Metabolism	
CHM 476 or CHM 576	Physical Chemistry II	
CHM 524	Fundamentals of Separation Science	
CHM 558	Topics in Organic Chemistry	
M E 308	Thermodyn Fluid Flow	
Total Hours		56

Total hours required for the CHM-CE concentration: 86.

Students who complete the CHM-CE concentration are strongly encouraged to take an Economics course (ECO 100 Introduction to Economics, ECO 221 Principles of Microeconomics, or ECO 222 Principles of Macroeconomics) when fulfilling the Knowledge and Reasoning in the Social and Behavioral Sciences (SB) requirement in the BCC.