

CHEMICAL ENGINEERING OPTION

This option is available within the Chemistry (<https://catalog.oregonstate.edu/college-departments/science/chemistry/chemistry-ba-bs-hba-hbs/>) major at the following location:

- **Corvallis**

The Chemical Engineering option is a Track-Two option in the BS degree in Chemistry and offers selected chemical engineering concepts that may enhance career opportunities in areas such as electronics, polymers, and biotechnology, or prepare students for graduate studies in chemistry or related fields. This option includes nine courses in basic engineering and chemical engineering including mass and fluid transport, reaction engineering, and separations processes and a choice of career supporting electives with an opportunity to explore minors in other areas.

Option Code: 303

Upon successful completion of the program, students will meet the following learning outcomes:

- Recall, integrate, and apply essential core information about the key components of Chemistry.
- Demonstrate competency in basic laboratory techniques, laboratory safety, chemical synthesis, and measurement of chemical properties and phenomena.
- Communicate ideas effectively orally and in writing.
- Demonstrate the ability to analyze data, access information and integrate information from various sources in order to solve problems.

Code	Title	Credits
Major Core		
Complete the following physics series in the major: ¹		
PH 211 & PH 212 & PH 213	+*GENERAL PHYSICS WITH CALCULUS and *GENERAL PHYSICS WITH CALCULUS and *GENERAL PHYSICS WITH CALCULUS	
Recommended for Core		
CH 462	*EXPERIMENTAL CHEMISTRY II	
Option Requirements		
CBEE 211	MATERIAL BALANCES AND STOICHIOMETRY	3
CBEE 212	ENERGY BALANCES	3
CHE 311	THERMODYNAMICS	3
CHE 331	TRANSPORT PHENOMENA I	4
CHE 332	TRANSPORT PHENOMENA II	3
MTH 256	APPLIED DIFFERENTIAL EQUATIONS	4
Electives		
Select three courses from the following:		9-12
CBEE 213	PROCESS DATA ANALYSIS	
CHE 361	CHEMICAL PROCESS DYNAMICS AND SIMULATION	
CH 401	RESEARCH ²	
or CHE 401	RESEARCH	
CHE 312	CHEMICAL ENGINEERING THERMODYNAMICS	
CHE 444	THIN FILM MATERIALS PROCESSING	
CHE 445	POLYMER ENGINEERING AND SCIENCE	
CHE 446	POLYMER SYNTHESIS AND PROCESSING	
CHE 450	CONVENTIONAL AND ALTERNATIVE ENERGY SYSTEMS	
CHE 451	SOLAR ENERGY TECHNOLOGIES	
CHE 452	ELECTROCHEMICAL ENERGY SYSTEMS	

CHE 461	PROCESS CONTROL
ENGR 213	STRENGTH OF MATERIALS
MATS 321	INTRODUCTION TO MATERIALS SCIENCE
ME 331	FLUID MECHANICS

Total Credits 29-32

*

Baccalaureate Core course. Applies to general education requirements for undergraduate students in a catalog year up to 2024-2025

+

Core Education course. Applies to general education requirements for undergraduate students in catalog year 2025-2026 and beyond

^

Writing Intensive Curriculum (WIC) course

1

This option requires physics with calculus so students must complete PH 211, PH 212 and PH 213 as part of the major core

2

Up to 3 credits of CH 401 or CHE 401 can count towards electives

Option Code: 303