

Chemistry/Biochemistry – What is it?

Chemistry is a physical science involving the study of all substances and energy; biochemistry is the study of the living organisms at a molecular level. Chemistry is used to produce substances ranging from food, medicine, clothing and cosmetics, to plastics, paper and electronics; therefore knowledge of chemistry is critical to the health and safety of people and the environment.

Areas of study in Chemistry/Biochemistry: Analytical Chemistry, Inorganic and Organic Chemistry, Quantitative Analysis, Physical Chemistry, Thermodynamics, Statistical Mechanics, Kinetics, Instrumental Analysis.

Where does my path start?

You will complete an Associate of Science-Transfer (AS-T) Track 1 Degree at Shoreline. Use the AS-T Track 1 **Degree Planning Guide** to understand the requirements for graduation.

Once you complete your Shoreline degree, you can transfer to a four-year school to earn a Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) in Chemistry or Biochemistry.

Where can I go for help?

Program Faculty Advisors

Linda Kuehnert	206-546-4575	lkuehner@shoreline.edu	Rm 2821
Dave Phippen	206-546-4572	dhippen@shoreline.edu	Rm 2817
Amar Yahiaoui	206-546-4738	ayahiaou@shoreline.edu	Rm 2820
Guy Ting	206-546-4576	gting@shoreline.edu	Rm 2822
Tiffany Meier	206-546-6953	tmeier@shoreline.edu	Rm 5231

For course information and entry codes, contact:

biologyadvising@shoreline.edu
chemistryadvising@shoreline.edu
mathadvising@shoreline.edu

General Academic Advising

FOSS (5000) Building, Rm. 5229
 206-546-4559
advising@shoreline.edu
www.shoreline.edu/advising

Career Planning

www.shoreline.edu/job-career-services

International Student Academic Advising

9000 Building, Rm. 9302
 206-546-4697
ieadvisors@shoreline.edu
www.shoreline.edu/international/advising/

Where can I transfer?

The AS-T makes it possible for students to transfer to a number of public and private colleges and universities in the U.S. with junior standing. Institutions in Washington State that offer chemistry (C) and biochemistry (BC) majors are listed below.

Central Washington University (C, BC)	Seattle University (C, BC)	Western Washington University (C, BC)
Eastern Washington University (C, BC)	The Evergreen State College (C, BC)	Whitman College (C, BC)
Gonzaga University (C, BC)	University of Puget Sound (C, BC)	Whitworth University (C, BC)
Heritage University (C)	University of Washington, Seattle (C, BC)	Walla Walla University (C)
Pacific Lutheran University (C, BC)	University of Washington, Bothell (C)	Western Governors University -
Seattle Pacific University (C, BC)	Washington State University (C, BC)	Washington (Teaching 5-12)

What can I do with a Bachelor's Degree in Chemistry/Biochemistry?

Graduates in Chemistry and Biochemistry develop strong critical thinking, problem solving, computational and technical skills to work in positions such as research scientist, industrial chemist, crime lab analyst, chemical/pharmaceutical salesperson, quality control specialist, environmental climate change researcher, forensic scientist, and educator. Advanced degrees and licensures are often required to enter medical professions or for professional advancement in other areas in the physical sciences.

Potential employers include: Pharmaceutical companies, agriculture and biotechnology industries, government agencies, manufacturing firms, hospitals, clinics, public and private schools, colleges and universities, and businesses. For more, please visit <http://www.shoreline.edu/counseling-services/career-counseling.aspx>.

What courses should I take?*

I. GENERAL EDUCATION REQUIREMENTS | 20 Credits

ENGL &101
 ENGL &102, &230, or CMST& 101
 Multicultural Understanding
 Quantitative/Symbolic Reasoning (MATH &151)

II. DISTRIBUTION REQUIREMENTS | 15 Credits

One course in Humanities
 One course in Social Sciences
 A third course in either Humanities or Social Sciences

III. PRE-MAJOR PROGRAM I 54 – 59 credits

Chemistry	19.5 Credits	QTR	GR	CR
CHEM 171/181	Every quarter			6.5
CHEM 172/182	Win, Spr, Sum			6.5
CHEM 173/183	Spr, Sum, Fall			6.5

Additional Chem.	10-15 Credits	QTR	GR	CR
CHEM& 241/271	Fall, Win			
CHEM& 242/272	Win, Spr			
CHEM& 243/273	Spr			

* **Chemistry Majors:** Choose a physics sequence. Calculus-based physics (PHYS& 221, 222, 223) is usually required for Bachelor of Science degrees. Chemistry usually does not require biology unless preparing for a health professional program.

Biochemistry Majors: Choose biology or physics, or both. The biology sequence prepares students for biochemistry classes in the junior year. Physics can be taken after transfer.

III. PRE-MAJOR PROGRAM (CONTINUED)

Additional Math	10 Credits	QTR	GR	CR
MATH& 152				5
MATH& 163				5

Science Sequence	15-16.5 Credits (Based on your major, please choose one of the options below)*	QTR	GR	CR

Biology	Algebra-based Physics	Calculus-based Physics
BIOL &211 Every qtr	PHYS &144 Fall	PHYS &221 Fall, Win
BIOL &212 Win, Spr	PHYS &115 Win	PHYS &222 Spr, Sum
BIOL &213 Spr, Sum	PHYS &116 Spr	PHYS &223 Win, Spr

What does my chosen four-year school require?

Before choosing classes, become familiar with the four-year program where you want to apply: visit the website, email the department, and/or speak with a Shoreline advisor. Below are examples from Washington schools with different admissions and graduation requirements. Check with the school for world language requirements. (Non-native speakers of English are often exempt from this requirement.)

School	Degrees	Requirements
Seattle University	B.A. and B.S. in Chemistry; B.S. in Biochemistry	Chemistry students should complete one year each of general chemistry, calculus, and calculus-based physics before transfer. Biochemistry students should complete a year each of general chemistry, organic chemistry, and calculus plus BIOL &211 before transfer. Students who complete the AS-T may have additional core requirements to complete after transfer.
University of Washington – Bothell	B.A. in Chemistry	Transfer students should complete three quarters each of general chemistry, organic chemistry, and calculus.
University of Washington – Seattle	B.A. and B.S. in Chemistry; B.S. with Biochemistry option	Chemistry transfer students should complete a year of general chemistry, and two quarters each of organic chemistry, calculus and physics before transfer. The third quarter of organic chemistry, calculus and physics is required for graduation, and it is best to complete sequences at one campus. Biochemistry transfer students should complete one year each general chemistry and introductory biology, and at least two quarters of organic chemistry and calculus. Full sequences of organic chemistry and calculus will be required for graduation.
Western Washington University	B.A. and B.S. in Chemistry; B.S. in Biochemistry	Transfer students should plan to complete three quarters each of general chemistry, calculus, and calculus-based physics.

** This unofficial guide is intended to support you as you prepare for your major. Please consult with an advisor and your chosen four-year school(s), as program and admissions requirements vary and may change without notice.