

Program Progression Guides

Disclaimer: The 2022-2023 Purdue West Lafayette catalog is considered the source for academic and programmatic requirements for students entering programs during the Fall 2022, Spring 2023, and Summer 2023 semesters. The Program Progression Guide assists students in the development of an individualized 8-semester plan. Students are encouraged to use this guide, MyPurduePlan* (online degree auditing tool) and the Student Educational Planner (SEP) as they work with their academic advisor towards the completion of their degree requirements.

Notification: Each student is ultimately responsible for knowing, monitoring and completing all degree requirements.

An undergraduate degree in the College of Science requires completion of the following degree requirements.

University Degree Requirements		
Minimum 2.0 Cumulative GPA	Minimum 120 Credits that fulfill degree requirements	32 Residency Credits (30000-level and above) at a Purdue University campus
University Core Curriculum** https://www.purdue.edu/provost/students/s-initiatives/curriculum/courses.html		
<ul style="list-style-type: none"> Human Cultures: Behavioral/Social Science Human Cultures: Humanities Information Literacy Oral Communication 	<ul style="list-style-type: none"> Quantitative Reasoning Science Science, Technology & Society Selective Written Communication 	
Civic Literacy Proficiency https://www.purdue.edu/provost/about/provostInitiatives/civics/		
Required Major Program Courses (see following pages)		
Departmental specific requirements, including 2.0 average GPA in classes required to fulfill biology requirements. Minimum 2.0 cumulative GPA Must have a 500-level BIOL course (3-credit BIOL lecture)		
College of Science Core Curriculum https://www.purdue.edu/science/Current_Students/curriculum_and_degree_requirements/college-of-science-core-requirements.html?		
<ul style="list-style-type: none"> Freshman Composition – 3 credits Technical Writing and Presentation - 3 credits Teaming & Collaboration (NC) General Education - 9 credits 	<ul style="list-style-type: none"> Foreign Language & Culture – 9 credits Great Issues - 3 credits Laboratory Science - 8 credits Multidisciplinary - 3 credits 	<ul style="list-style-type: none"> Mathematics - 6-10 credits Statistics - 3 credits Computing - 3 credits
Degree Electives		
Any Purdue or transfer course approved to meet degree requirements in accordance with individual departmental policies. Consult the No Count Course List for courses which may not be used to meet any College of Science degree requirement.		

* This audit is not your academic transcript and it is not official notification of completion of degree or certificate requirements.

** University Core Curriculum Outcomes may be met through completion of the College of Science Core curriculum. Students should consult with their academic advisors and MyPurdue Plan for course selections.

2022-23 Chemical Biology and Biochemistry Degree Progression Guide

The Department of Biological Sciences has suggested the following degree progression guide for the Chemical Biology and Biochemistry Degree. Students will work with their academic advisors to determine their best path to degree completion. Course pre-requisites are specific to this degree plan.

Credit	Fall 1st Year	Prerequisite	Credit	Spring 2nd Year	Prerequisite
2	BIOL 12100		3	BIOL 13100	
5	CHM 12901	ALEKS 85 or Calc Placement	2	BIOL 13500 or 19500	BIOL 12100 or 13100 plus CHM 12901
4-5	MA 16100 or 16500	ALEKS 85	4	CHM 25500-25501	CHM 12901
3-4	Science Core Option		4-5	MA 16200 or 16600	MA 16100 or 16500
1	BIOL 11500 or CHM 19400	BIOL 12100 co-req	3	Science Core Option	
15-17			16-17		

Credit	Fall 2nd Year	Prerequisite	Credit	Spring 2nd Year	Prerequisite
3	BIOL 23100	BIOL 13100 and co-req CHM 12901	3	BIOL 24100	BIOL 23100
2	BIOL 23200	Co-req BIOL 23100	2	BIOL 24200	
4	CHM 25600-25601	CHM 25500	4	CHM 33900-33901	CHM 25600
3	Science Core Option		2	BIOL 28600	BIOL 12100
3	Science Core Option		3-4	CS 17700 or 15900 or 18000	
15			14-15		

Credit	Fall 3rd Year	Prerequisite	Credit	Spring 3rd Year	Prerequisite
3	BIOL 42000	BIOL 23100 & 24100	3	BIOL 41500	BIOL 23100 & 24100
3	CHM 59900 (Bioanalytical Chemistry)		4	PHYS II Selective	PHYS I
4	PHYS I Selective	(BIOL, CHM, MA)	4	CHM 37200	PHYS I
3	Science Core Option		3	Science Core Option	
2	BIOL 49400/CHM 49900 (research)		3	Free Elective	
15			17		

Credit	Fall 4th Year	Prerequisite	Credit	Spring 4th Year	Prerequisite
3	BIOL 59500 (Meth Meas Phys Biochem) or CHM 56000		3	BIOL 53601 or 59500 (CryoEM 3D Reconstruction or 59500 (Intro to X-ray Crystallography)	
2	BIOL 49500/CHM 49000 (Research Capstone)		2	BIOL 49500/CHM 49000 (Research Capstone)	
3	CHM 49000 (Bioinorganic Chemistry)		3	STAT 50300	
3	Science Core Option		3-4	Science Core Option	
3	Science Core Option		3	Free Elective	
14			14-15		

Science Core Curriculum Options

(one course needed for each requirement unless otherwise noted)

Options recommended for first- and second-year students	Options recommended for third- and fourth-year students
Freshman Composition ^{UC} General Education ^{UC} (3 courses needed) Foreign Language and Culture ^{UC} (3 courses needed) Multidisciplinary Experience ^{UC} (BIOL 12100 satisfies)	Technical Writing and Presentation ^{UC} (COM 217 recommended) Statistics (STAT 50300) Computing (CS 17700 or CS 18000 also meet Teambuilding) Great Issues

^{UC} Select courses may also satisfy a University Core Curriculum requirement; see the University Core Requirement [course list](#) for approved courses. Students must have 32 credits at the 30000 level or above taken at Purdue.

CHEMICAL BIOLOGY AND BIOCHEMISTRY (CBB)

Fall 2022

Graduation Requirements:

- A minimum 2.0 average in all biology courses required for this major
- At least one 3-credit **500-level Biology** course is required
- A minimum of 32 credits at or above the 300-level completed at a Purdue campus
- 120 Total Credits

BIOLOGY:

1. BIOL 12100 Biology I: Diversity, Ecology and Behavior (2 cr.; fall)
2. BIOL 13100 Biology II: Development, Structure, and Function of Organisms (3 cr.; spring)
3. BIOL 13500 1st Year Biology Lab (2 cr.; both) **or**
BIOL 19500 Year I Bio Lab: Diet, Disease & the Immune System (2 cr.; spring) **or**
BIOL 19500 Year I Bio Lab: Disease Ecology (2 cr.; alternate fall) **or**
BIOL 19500 Year I Bio Lab: Phages to Folds (2 cr.; fall) **or**
ABE 22600 Biotechnology Lab (2 cr.; fall)
4. BIOL 23100 Biology III: Cell Structure and Function (3 cr.; fall)
5. BIOL 23200 Laboratory in Biology III: Cell Structure and Function (2 cr.; fall)
6. BIOL 24100 Biology IV: Genetics and Molecular Biology (3 cr.; spring)
7. BIOL 24200 Laboratory in Genetics and Molecular Biology (2 cr.; spring)
8. BIOL 28600 Intro. to Ecology & Evolution (2 cr.; spring)
9. BIOL 41500 Intro. to Molecular Biology (3 cr) (**satisfies Biology Intermediate requirement**)
10. BIOL 42000 Eukaryotic Cell Biology (3 cr.; fall)
11. One of:
 - A. BIOL 59500 Methods & Measurement in Biophysical Chemistry (3 cr.; fall)
 - B. CHM 56000 Organic Spectroscopic Analysis (3 cr.; fall)
12. One of:
 - A. BIOL 53601 Biological and Structural Aspects of Drug Design and Action (3 cr.; spring)
 - B. BIOL 59500 CryoEM 3D Reconstruction (3 cr.; fall)
 - C. BIOL 59500 Intro to X-ray Crystallography (3 cr.; fall)
13. BIOL 49400 or 49900 or CHM 49900 Research (3 cr.; both)
14. **Lab Requirement:** Base Lab requirement met with CBB Research Capstone Course

CHEMISTRY:

15. CHM 12901 General Chemistry with a Biological Focus (5 cr.; fall)
16. CHM 25500 Organic Chemistry (3 cr.; both)
17. CHM 25501 Organic Chemistry Lab (1 cr.; both)
18. CHM 25600 Organic Chemistry (3 cr.; both)
19. CHM 25601 Organic Chemistry Lab (3 cr.; both)
20. CHM 33900 Biochemistry: A Molecular Approach (3 cr; spring)
21. CHM 33901 Biochemistry Laboratory (1 cr; spring)
22. CHM 37200 Physical Chemistry (4 cr; spring)
23. CHM 49000 Bioinorganic Chemistry (3 cr.; fall)
24. CHM 59900 Bioanalytical Chemistry (3 cr.; fall)

MATH: For the Chemical Biology and Biochemistry Major, you must choose one of the following calculus sequences:

1. MA 16100-16200 (5 cr.; both) **or**
2. MA 16500-16600 (4 cr.; both)

PHYSICS

- PHYS 23300 Physics for Life Sciences (4 cr.; both)
PHYS 23400 Physics for Life Sciences (4 cr.; both)

COLLEGE OF SCIENCE CORE

Composition and Presentation; Teambuilding and Collaboration; Language and Culture; Great Issues; General Education; Multidisciplinary Experience; Mathematics; Statistics; Computing

OTHER: all University Core and Civics Literacy Requirements must also be completed

FREE ELECTIVES

Approximately 0 - 6 credits