BIOCHEMISTRY, BS

The BS degree in Biochemistry provides thorough training in the fundamental principles and experimental techniques of chemistry and biology as they apply to biological systems and emphasizes the interdisciplinary nature of these sciences. This program prepares students for various careers, including biological, chemical, or biochemical research, secondary education teaching, or employment in the health sciences, government, or industry. The Biochemistry major may lead to interdisciplinary sciences such as biotechnology, forensics, environmental science, or pharmacology. It is well suited to the needs of students interested in pre-health professional programs, including pre-medical, pre-veterinary, and pre-pharmacy.

Biochemistry majors interested in teaching science at the elementary or secondary level should meet with an advisor early in their program to plan an appropriate course sequence. Biochemistry majors with strong academic backgrounds are encouraged to apply to the Roosevelt Honors Program.

Standards

All courses applying to the biochemistry major, including required supporting courses, must be passed with a C- or higher grade and a minimum cumulative GPA of 2.0.

Requirements

- Courses applying to the Biochemistry major, including required supporting courses, must be taken on a letter-grade basis.
- At least 25 credit hours of the required Biochemistry, Chemistry, and/or Biology courses must be completed at Roosevelt University.
- All Biochemistry, Chemistry, and Biology courses must be taken within eight years of graduation to be accepted for credit without examination.
- Entering students with a score of at least 4 on the AP chemistry exam receive 3 credit hours of CHEM 1xx AP Chemistry credit and are waived from CHEM 201 GENERAL CHEMISTRY I. Students with a 3 on the AP chemistry exam receive 3 credit hours of CHEM 1xx AP Chemistry credit and satisfy the physical science general education lecture requirement.
- Biochemistry majors may not minor in either Biology or Chemistry. A mathematics minor is encouraged, but no minor is required

Code	Title	Credit Hours
Biology Core		**15**
BIOL 201	ORGANISMIC BIOLOGY (3 credit hour lecture, 2 credit hour lab)	
BIOL 202	ECOLOGY, EVOLUTION, AND GENETICS (3 credit hour lecture, 2 credit hour lab)	
BIOL 301	CELLULAR &MOLECULAR BIOLOGY (3 credit hour lecture, 2 credit hour lab)	
Chemistry Core		**25**
CHEM 201	GENERAL CHEMISTRY I (3 credit hour lecture, 2 credit hour lab)	
CHEM 202	GENERAL CHEMISTRY II (3 credit hour lecture, 2 credit hour lab)	
CHEM 211	ORGANIC CHEMISTRY I (3 credit hour lecture, 2 credit hour lab)	
CHEM 212	ORGANIC CHEMISTRY II (3 credit hour lecture, 2 credit hour lab)	
CHEM 336	ANALYTICAL CHEMISTRY (3 credit hour lecture, 2 credit hour lab)	
Biochemistry Core		**10**
BCHM 355	BIOCHEMISTRY (3 credit hour lecture)	
BCHM 356	EXPERIMENTAL METHODS IN BIOCHEMISTRY & BIOTECHNOLOGY (3 credit hour lecture and lab)	
BCHM 357	ADVANCED BIOCHEMISTRY (3 credit hour lecture)	
BCHM 393	BIOCHEMISTRY SEMINAR (1 credit hour seminar)	
Physical Chemistry Core		**3**
BCHM 320	PHYSICAL CHEMISTRY FOR BIOSCIENCE (3 credit hour lecture)	
Advanced electives		**8-10**
	At least two additional BCHM, BIOL or CHEM courses, including at least two disciplines and at least one laboratory. Up to 3 credit hours of CHEM, BIOL or BCHM research may be applied to this requirement.	
	CHEM 3XX: Advanced chemistry elective, 300 level	
	BCHM 3XX: Advanced biochemistry elective, 300 level	
Supporting Sequence		**26**
MATH 122	TRIGONOMETRY AND PRECALCULUS	
MATH 217	ELEMENTARY STATISTICS	
MATH 231	CALCULUS I (5 credit hours)	
MATH 232	CALCULUS II (5 credit hours)	
or BIOL 318	BIOSTATISTICS	
PHYS 201	PHYSICS I (5 credit hours)	
PHYS 202	PHYSICS II (5 credit hours)	
General Education Requirements including University Writing Requirement		**34**
	See College of Science, Health and Pharmacy General Education Requirements below. Some requirements are satisfied by the major courses.	
Total Credit Hours		**121-123**

CORE Requirements (General Education)

Code	Title	Credit Hours
First Year Success Course or Transfer Success Course		
FYS 101	FIRST YEAR SUCCESS COURSE	1
or TRS 101	TRANSFER SUCCESS 101	
Communication Requirement		
ENG 101	COMPOSITION I: CRITICAL READING & WRITING	3
ENG 102	COMPOSITION II: INTRODUCTION TO ACADEMIC RESEARCH	3
COMM 101	PUBLIC SPEAKING (or program specific CORE communications course)	3
Ideas of Social Justice		
3 credits in coursework categorized as Ideas.		3
Humanities and Fine and Performing Arts [2, 3]		

9 credits from the following subject areas: African-American Studies, Art History, English (excluding ENG 101 and ENG 102), History, Languages, Music, Philosophy, Theatre, Communication and Women's and Gender Studies		9
Mathematics		
MATH 110	QUANTITATIVE LITERACY (or above) [1]	3
Science		
One biological science and one physical science required (one must include a one credit lab).		7-8
Social Sciences [2,3,4]		
9 credits from the following subject areas: African-American Studies, Criminal Justice, Economics, History, Journalism, Philosophy, Political Science, Psychology, Sociology and Women's and Gender Studies		9
Experiential Learning		
6 credits from coursework categorized as Experiential Learning.		6
Total Credit Hours		**47-48**

1 Higher level of Math may be required by major
2 Coursework must come from outside of students' major discipline
3 A maximum of 9 credits can be applied from a single discipline towards humanities and social science requirements
4 Digital Advertising and Public Relations Majors must complete COMM 110 with a grade of C or higher. This course can fulfill one Social Science requirement.

These quantitative requirements also apply to degrees.

- Students must earn a minimum of 120 semester hours.
- Students may apply no more than 60 credit hours of 100-level courses toward the degree.
- Students must apply no fewer than 60 credit hours of 200- and 300-level courses toward the degree.
- Students must have at least 18 credit hours (of the 60 credit hours above) at the 300 level.
- Students may transfer in no more than 70 credit hours from community colleges.
- Students earning less than 60 total hours in residence must take their final 30 hours at Roosevelt University. Note that some majors have additional requirements for RU hours.
- Students must have a grade point average of 2.0 or higher to graduate. Note that some majors have additional GPA requirements.
- Students may apply no more than 51 hours in the major (BA) or 57 hours in the major (BS)

Your degree map is a general guide suggesting courses to complete each term on the academic pathway to your degree. It is based on the most current scheduling information from your academic program. Your program's degree map is reviewed annually and updated as schedules change (although you retain the same course requirements as long as you are continuously enrolled in your degree program).

Always work closely with your academic advisor to understand curriculum requirements and scheduling, as each student's academic plan can look slightly different.

Year 1

Fall	Credit Hours	Spring	Credit Hours
FYS 101	1	BIOL 202	5
CHEM 201	5	CHEM 202	5
MATH 121	3	ENG 102	3
ENG 101	3	Ideas of Social Justice	3
Social Science Course #1	3		
	15		**16**

Year 2

Fall	Credit Hours	Spring	Credit Hours
BIOL 201	5	BIOL 301 (Experiential Learning #1)[2]	5
CHEM 211	5	CHEM 212	5
MATH 217	3	MATH 122	3
Humanities Course #1	3	Social Science Course #2	3
	16		**16**

Year 3

Fall	Credit Hours	Spring	Credit Hours
BCHM 355	3	BCHM 357	3
MATH 231	5	BCHM 393	1
CHEM 336	5	MATH 232 or BIOL 318	3-5
BIOL 3XX, CHEM 3XX, or BCHM 3XX[1]	3	Humanities Course #2	3
		Social Science Course #3	3
	16		**13-15**

Year 4

Fall	Credit Hours	Spring	Credit Hours
PHYS 201	5	PHYS 202	5
BCHM 356	3	BCHM 320	3
BIOL 3XX, CHEM 3XX, or BCHM 3XX[1]	3	COMM 101	3
Experiential Learning Course #2[2]	3	Humanities Course #3	3
	14		**14**

Total Credit Hours 120-122

1 Or any other course at the 300 level within the discipline except BIOL 301 CELLULAR &MOLECULAR BIOLOGY.
2 Experiential Learning class must be 200/300 level. Satisfies CORE Experiential Learning requirement. EXL courses can satisfy major requirements/electives or CORE requirement.