

BIOCHEMISTRY
Bachelor of Science

Requirements for Major: At least 40 credit hours in the department, including:

CH 151 Fundamentals of Chemistry I; 5 credit hours	Offered:	Fall
CH 152 Fundamentals of Chemistry II; 5 credit hours		Spring
CH 320 Analytical Chemistry; 3 credit hours		Fall
CH 321 Analytical Chemistry Laboratory; 1 credit hour		Fall
CH 340 Organic Chemistry I; 3 credit hours		Fall
CH 341 Organic Chemistry II; 3 credit hours		Spring
CH 342 Organic Chemistry Laboratory I; 2 credit hours		Fall
CH 343 Organic Chemistry Laboratory II; 2 credit hours		Spring
CH 350 Biochemistry I; 3 credit hours		Fall
CH 351 Biochemistry Laboratory I; 2 credit hours		Fall
CH 352 Biochemistry II; 3 credit hours		Spring
CH 353 Biochemistry Laboratory II; 2 credit hours		Spring
CH 381 Physical Chemistry I; 3 credit hours		Fall
CH 390 Undergraduate Chemical Research; 2 credit hours	Fall/Spring/Summer	
CH 391 Chemistry Seminar; 1 credit hour		Spring

Nine correlated courses:

BI 102 General Cellular Biology; 5 credit hours	Offered:	Fall/Spring
BI 301 General Microbiology; 4 credit hours		Fall/Spring
BI 333 General Genetics; 4 credit hours		Fall/Spring
BI 353 Molecular Genetics; 3 credit hours		Fall
BI 354 Molecular Biology Laboratory; 3 credit hours		Spring
MA 151 Calculus & Analytical Geometry I; 5 credit hours		Fall/Spring
PS 281 General Physics I; 5 credit hours		Spring
PS 282 General Physics II; 5 credit hours		Fall
CM 111 Introduction to Structured Programming; 4 credit hours		Fall/Spring

Required NSD concentration– 30 credit hours:

The B.S. degree has a 30-hour concentration requirement of Natural Sciences courses (Biology, Chemistry, Mathematics & Statistics, Physics & Astronomy, or Computer Information Science). This concentration must be in departments other than the major and must have at least 20 hours in one department.

Notes

Research (CH 390) must be initiated at least one semester prior to the semester of graduation
A written report of research or internship is required of all majors

General Education Distribution Requirements (BS):

Humanities (9) (GEHU/GECPA) (Max 6 hours/ discipline)	Course Number	Social Sciences (9) (GESS) (Max 6 hours/ discipline)	Course Number	Natural Sciences/ Mathematics (9) (GENS) (Max 8 Hours or 2 Courses/Discipline)
Fine Arts (3)		Soc. Science 1 (3)		BI 102 (5)
Humanities 2 (3)		Soc. Science 2 (3)		MA 151 (5)
Humanities 3 (3)		Soc. Science 3 (3)		

Core University/BS-Specific Requirements:

WU 101 (3)* C or Better		Natural Science Minor (30 – 20 in one Discipline)	
EN 101 (3) C or Better		Hours Outside Major (76)	
EN 300 (3) C or Better		Upper Division (300 and above) (45)	
MA 112 or MA 116 (3)** C or Better		Hours Within Arts and Sciences (99)	
>= 2.0 Overall Cumulative GPA		>= C Grade All Major and Correlated Courses	
		Total Hours (120)	

**Students transferring with 24 or more credit hours completed at an accredited post-secondary institution (after graduating from High School) with a GPA of 2.0 or higher are exempt from this requirement*

***May be waived if the student successfully places into a higher-level mathematics course with an ACT score of 25 or higher and then successfully completes that course with a grade of C or higher or if a student presents an ACT score in mathematics of at least 28 (SAT of at least 640).*

Please direct questions to:

Dr. Shaun Schmidt, Chair

Department of Chemistry, Washburn University

• E-Mail: chemistry@washburn.edu • Office Phone: 785-670-2270

<http://www.washburn.edu/chemistry>

rev. 6-25-19



Sample 4-Year Schedule for Biochemistry Major
Bachelor of Science
120 Hours

Freshman			
Fall Semester		Spring Semester	
CH 151 – Fundamentals of Chemistry I	5	CH 152 – Fundamentals of Chemistry II	5
BI 102 – General Cellular Biology	5	EN 101 – First Year Writing	3
WU 101 – Washburn Experience	3	MA 151 – Calculus	5
Humanities General Education	3	Soc. Sci. General Education	3
TOTAL	16	TOTAL	16
Sophomore			
Fall Semester		Spring Semester	
CH 340 – Organic Chemistry I	3	CH 341 – Organic Chemistry II	3
CH 342 – Organic Chemistry I Lab	2	CH 343 – Organic Chemistry II Lab	2
BI 301 – General Microbiology	4	BI 333 – General Genetics	4
CM 111 – Intro Structured Prog.	3	PS 281 – General Physics I	5
Humanities General Education	3	Soc. Sci. General Education	3
TOTAL	15	TOTAL	17
Junior			
Fall Semester		Spring Semester	
CH 350 – Biochemistry I	3	CH 352 – Biochemistry II	3
CH 351 – Biochemistry I Lab	2	CH 353 – Biochemistry II Lab	2
EN 300 – Advanced College Writing	3	BI 354 – Molecular Biology Lab	3
PS 282 – General Physics II.	5	Soc. Sci. General Education	3
CH 390 – Chemistry Research	1	Humanities General Education	3
		CH 390 – Chemistry Research	1
TOTAL	14	TOTAL	15
Senior			
Fall Semester		Spring Semester	
CH 381 – Physical Chemistry	3	CH 391 – Chemistry Seminar	1
CH 320 – Analytical Chemistry	3	NSD Elective	12
CH 321 – Analytical Chemistry Lab	1		
BI 353 – Molecular Genetics	3		
NSD Elective	4		
TOTAL	14	TOTAL	13

Oral presentation of CH 390 research results

Required research completed prior to the semester of graduation