CHEMISTRY
Bachelor of Science
(B.S.)

Certified by the American Chemical Society

Requirements for Major: At least 45 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 345 Inorganic Chemistry Laboratory; 2 credit hours		Fall-Even Year
	CH 346 Instrumental Analysis; 2 credit hours		Spring-Odd Year
	CH 350 Biochemistry I; 3 credit hours		Fall
	CH 362 Spectroscopy; 2 credit hours		Spring-Odd Year
	CH371 Advanced Topics in Chemistry; 1 credit hour		Spring
	CH 381 Physical Chemistry I; 3 credit hours		Fall-Odd Year
	CH 382 Physical Chemistry II; 3 credit hours		Spring-Even Year
	CH 385 Physical Chemistry Laboratory; 1 credit hour		Spring-Even Year
	CH 386 Inorganic Chemistry; 3 credit hours		Spring-Odd Year
	CH 390 Undergraduate Chemical Research; 2 credit hours		Fall/Spring/Summer
	CH 391 Chemistry Seminar; 1 credit hour		Spring

Five correlated courses:

	MA 151 Calculus & Analytical Geometry I; 5 credit hours	Offered:	Fall/Spring
	MA 152 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
	At least three credit hours in a computer programming language		

Required concentration – 30 credit hours:

	The B.S. degree also requires a 30-hour concentration to be chosen from the Natural Sciences (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
	An oral presentation of CH 390 research results is required of all BS 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)			MA 151 (5)	
Humanities 2 (3)			Soc. Science 2 (3)			PS 281 (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 (72)	
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 (84)	
>= 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: 10-2021

Sample 4-Year Schedule for Chemistry Major
(ACS Certified) Bachelor of Science

120 Hours

Sample curriculum for students starting in an even numbered academic year. Individual four-year degree plans are developed for each student upon consultation with an academic advisor.

Freshman			
Fall Semester		**Spring Semester**	
CH 151 – Fundamentals of Chemistry I	5	CH 152 – Fundamentals of Chemistry II	5
MA 151 – Calculus I	5	MA 152 – Calculus II	5
EN 101 – First Year Writing	3	Humanities General Education	3
WU 101 – Washburn Experience	3	Social Science 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
MA 153 – Calculus III	3	PS 281 – General Physics I	5
Gen Ed Natural Science	3	MA 241 – Differential Equations	3
Humanities General Education	3	Social Science General Education	3
TOTAL	**14**		**16**
Junior			
Fall Semester		**Spring Semester**	
CH 320 – Analytical Chemistry	3	CH 346 – Instrumental Analysis	2
CH 321 – Analytical Chemistry Lab	1	CH 362 – Spectroscopy	2
PS 282 – General Physics II	5	CH386 – Inorganic Chemistry	3
CH 345 – Inorganic Chemistry Lab	2	CH 390 – Chemical Research	2
MA 301– Linear Algebra	3	CM 111 – Intro to Structured Programming	4
		MA Elective	3
TOTAL	**14**	**TOTAL**	**16**
Senior			
Fall Semester		**Spring Semester**	
CH 350 – Biochemistry I	3	EN 300 – Advanced College Writing	3
CH 381 – Physical Chemistry I	3	CH 382 – Physical Chemistry II	3
Social Science General Education	3	CH 385 – Physical Chemistry Lab	1
Elective	4	CH391 – Chemistry Seminar	1
Humanities General Education	3	Elective	4
TOTAL	**16**		**12**

Oral Presentation of CH 390 research results
Required research completed prior to the semester of graduation.
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