CHEMISTRY
Bachelor of Science
(B.S.) 2016-2017

Certified by the American Chemical Society

Requirements for Major: At least 45 credit hours in the department, including:

	CH 151 Fundamentals of Chemistry I
	CH 152 Fundamentals of Chemistry II
	CH 320 Analytical Chemistry
	CH 321 Analytical Chemistry Laboratory
	CH 340 Organic Chemistry I
	CH 341 Organic Chemistry II
	CH 342 Organic Chemistry Laboratory I
	CH 343 Organic Chemistry Laboratory II
	CH 345 Inorganic Chemistry Laboratory
	CH 346 Instrumental Analysis
	CH 350 Biochemistry I
	CH 362 Spectroscopy
	CH 381 Physical Chemistry I
	CH 382 Physical Chemistry II
	CH 385 Physical Chemistry Laboratory
	CH 386 Inorganic Chemistry
	CH 390 Undergraduate Chemical Research
	CH 391 Chemistry Seminar

Five correlated courses:

	MA 151 Calculus & Analytical Geometry I
	MA 152 Calculus & Analytical Geometry I
	PS 281 General Physics I
	PS 282 General Physics II
	At least three credit hours in a computer programming language

Required minor – 30 credit hours:

	The B.S. degree also requires a 30-hour minor to be chosen from the Natural Sciences (Biology, Chemistry, Mathematics & Statistics, Physics & Astronomy, or Computer Information Science). This minor 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
	All majors shall present a portfolio of results obtained with departmental instrumentation prior to the semester of graduation

	Courses that must be taken to meet the standards for licensure in Kansas are CH 151, 152, 320, 321, 340, 342, 343, 350, 351, 390, and 391. In addition, students must fulfill the professional education course requirements of the Education Department

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 (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 (124)	

**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).*

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

Curriculum for students starting 2016-2017 Academic Year
Students starting in different academic years should contact their 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 – English Composition	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 Composition	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	3	CH391 – Chemistry Seminar	1
Humanities General Education	3	Elective	3
		Elective	3
		Elective	2
TOTAL	**15**		**16**

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