

Roadmap: Chemistry - Bachelor of Arts AS-BA-CHEM

College of Arts and Sciences
Department of Chemistry and Biochemistry
Catalog Year: 2016-2017

This roadmap is a recommended semester-by-semester plan of study for this major. However, courses and milestones designed as critical (!) must be completed in the semester listed to ensure a timely graduation.

CHEM 10090 General Chemistry I (4) or CHEM 10090 General Chemistry I (4) or CHEM 10090 General Chemistry I (4) or CHEM 10090 General Chemistry I (4) CHEM 10090 General Chemistry I (5) CHEM 10090 General Chemistry I (6) CHEM 10090 General Chemistry I (7) CHEM 10090 General Chemistry I (8) CHEM 10090 General Chemistry I (8) CHEM 10090 General Chemistry I (9) CHEM 10090 General Chemistry I (10) CHEM 10090 General Chemi					Maior		
CHEM 10060 General Chemistry I (4) or CHEM 10062 General Chemistry I (1)		Course Subject and Title	Credit Hours	Min. Grade	Major GPA	Attribute	Notes
CHEM 10970 Honors General Chemistry I (4)							
MATH 11010 Algebra for Calculus 3			4		-	KBS	
UC 10097 Destination Kent State: First Year Experience \(^1\)	!	CHEM 10062 General Chemistry I Laboratory	1			KBS	
Kent Core Requirement 3	!	MATH 11010 Algebra for Calculus	3			KMC	
Kent Core Requirement 3 Semester Two [14 Credits]		UC 10097 Destination Kent State: First Year Experience 1	1				
CHEM 10081 General Chemistry II (4) or CHEM 10971 Honors General Chemistry II (4) or CHEM 10971 Honors General Chemistry II (4) or CHEM 10083 General Chemistry II Laboratory		Kent Core Requirement	3				
CHEM 10061 General Chemistry II (4) or CHEM 10063 General Chemistry II Laboratory 1		Kent Core Requirement	3				
CHEM 10971 Honors General Chemistry II 4							
CHEM 10963 General Chemistry II aboratory			4			KBS	
MATH 11022 Trigonometry							
Kent Core Requirement							
Kent Core Requirement 3 3						KMC	
CHEM 20481 Basic Organic Chemistry							
CHEM 20481 Basic Organic Chemistry I²(4) 3-4		·	3				
Or CHEM 30481 Organic Chemistry Laboratory 2 1							
CHEM 3045 Organic Chemistry Laboratory 2			3 - 4				
! PHY 13001 General College Physics I 4 ■ KBS ! PHY 13021 General College Physics Laboratory I 1 ■ KBS ! MATH 12002 Analytic Geometry and Calculus I 5 ■ KMC Foreign Language ³ 4 - 5 ■ Semester Four [14 Credits] CHEM 20482 Basic Organic Chemistry II ⁴ (2) or CHEM 30482 Organic Chemistry II ⁴ (3) 2-3 ■ ! CHEM 30301 Inorganic Chemistry II ⁴ (3) 2 ■ ■ ! CHEM 30476 Organic Chemistry Laboratory II ⁵ 1 ■ ■ ! PHY 13002 General College Physics I ³ 4 ■ KBS ■ ■ ! PHY 13022 General College Physics Laboratory II 1 ■ KBS ■<		or CHEM 30481 Organic Chemistry I - (3)				FI D	
! PHY 13021 General College Physics Laboratory ! 1 ■ KBS ! MATH 12002 Analytic Geometry and Calculus ! 5 ■ KMC Foreign Language ³ 4 - 5 ■ Semester Four [14 Credits] CHEM 20482 Basic Organic Chemistry II ⁴ (2) or CHEM 30482 Organic Chemistry II ⁴ (3) 2-3 ■ ! CHEM 3031 Inorganic Chemistry Laboratory II ⁴ 1 ■ ! CHEM 30476 Organic Chemistry Laboratory II ⁴ 1 ■ ! PHY 13002 General College Physics II ³ 4 ■ KBS ! PHY 13022 General College Physics Laboratory II 1 ■ KBS ! PHY 13022 General College Physics Laboratory II 1 ■ KBS Foreign Language ³ 4 - 5 ■ KBS Semester Five [17 Credits] ** ** ** ** ! CHEM 30105 Analytical Chemistry for Life Sciences ² 4 •* ** ** ! CHEM 30105 Analytical Chemistry Laboratory I 1 C ** •* WIC Foreign Language ³ 3 - 5 ** ** ** ** Kent Core Requirement 3 ** ** ** ** **							
! MATH 12002 Analytic Geometry and Calculus I 5 ■ KMC Foreign Language³ 4 - 5 ■ KMC Semester Four [14 Credits] CHEM 20482 Basic Organic Chemistry II⁴(2) or CHEM 30482 Organic Chemistry II⁴(3) 2-3 ■ ■ ! CHEM 30476 Organic Chemistry I S 2 ■ ■ ! CHEM 30476 Organic Chemistry Laboratory II S 1 ■ ■ ! PHY 13002 General College Physics II³ 4 ■ KBS ! PHY 13022 General College Physics Laboratory II 1 ■ KBS ! PHY 13022 General College Physics Laboratory II 1 ■ KBS Semester Five [17 Credits] ■ CHEM 40567 Physical Chemistry I³ 3 ■ ! CHEM 30105 Analytical Chemistry I or Life Sciences² 4 ■ ■ ! CHEM 30107 Analytical Chemistry Laboratory I 1 C * ■ WIC Foreign Language³ 3 - 5 ■ WIC Kent Core Requirement 3 ■ ■ Kent Core Requirement 3 - ■ CHEM 403028 Introductory Biological Chemistry Laboratory S 1 ■ ■							
Foreign Language Semester Four 14 Credits CHEM 20482 Basic Organic Chemistry I							
Semester Four [14 Credits] CHEM 20482 Basic Organic Chemistry 1 4 (2)						KMC	
! CHEM 20482 Basic Organic Chemistry II * (2) or CHEM 30482 Organic Chemistry II * (3) ! CHEM 30476 Organic Chemistry Laboratory II * (2) ! CHEM 30476 Organic Chemistry Laboratory II * (2) ! CHEM 30476 Organic Chemistry Laboratory II * (2) ! PHY 13002 General College Physics II *			4 - 5				
! CHEM 30301 Inorganic Chemistry II ¹ (3) ! CHEM 30301 Inorganic Chemistry Laboratory II ⁸ ! CHEM 30476 Organic Chemistry Laboratory II ⁸ ! PHY 13002 General College Physics II ³	emester	Four [14 Credits]					
! CHEM 30301 Inorganic Chemistry I 5 2 ■ ! CHEM 30476 Organic Chemistry Laboratory II 5 1 ■ ! PHY 13002 General College Physics II 3 4 ■ KBS ! PHY 13022 General College Physics Laboratory II 1 ■ KBS Foreign Language 3 4 - 5 ■ Semester Five [17 Credits] *** *** ***			2-3				
! CHEM 30476 Organic Chemistry Laboratory II 6 ! PHY 13002 General College Physics II 3 ! PHY 13022 General College Physics Laboratory II 1			-		_		
! PHY 13002 General College Physics II³ 4 ■ KBS ! PHY 13022 General College Physics Laboratory II 1 ■ KBS Foreign Language³ 4 - 5 Semester Five [17 Credits] *** CHEM 40567 Physical Chemistry for Life Sciences² 4 ■ *** CHEM 30105 Analytical Chemistry I³ 3 ■ WIC CHEM 30107 Analytical Chemistry Laboratory I 1 C** ■ WIC Foreign Language³ 3 - 5 WIC Kent Core Requirement 3 *** Kent Core Requirement 3 Kent Core Requirement 3 *** CHEM 30284 Introductory Biological Chemistry ⁴ 4 ■ ** CHEM 40568 Elementary Physical Chemistry Laboratory ⁵ 1 ■ ** Foreign Language³ 3 - 5 ** Kent Core Requirement 3 ** College General Requirement 3 ** College General Requirement 3 ** College General Requirement 3 ** Semester Seven [15 Credits] ** ** ** ! CHEM 40302 Inorganic Chemistry II ² 2 ■** CHEM Electives ¹0 1 - 3 ■**							
! PHY 13022 General College Physics Laboratory II Foreign Language ³ 4 - 5 Semester Five [17 Credits] ! CHEM 40567 Physical Chemistry for Life Sciences 7 CHEM 30105 Analytical Chemistry I 7 3						KDC	
Foreign Language ³ ! CHEM 40567 Physical Chemistry for Life Sciences ⁷ CHEM 30105 Analytical Chemistry I ⁷ CHEM 30107 Analytical Chemistry Laboratory I Foreign Language ³ Kent Core Requirement Semester Six [14 Credits] CHEM 30284 Introductory Biological Chemistry Laboratory ⁵ CHEM 40568 Elementary Physical Chemistry Laboratory ⁵ Kent Core Requirement CHEM 40568 Elementary Physical Chemistry Laboratory ⁵ Kent Core Requirement Semester Six [14 Credits] CHEM 40568 Elementary Physical Chemistry Laboratory ⁵ Kent Core Requirement College General Requirement 3 College General Requirement ⁸ Semester Seven [15 Credits] ! CHEM 40302 Inorganic Chemistry II ⁷ 2 CHEM 40508 Elementary II ⁸ CHEM 40302 Inorganic Chemistry II ⁸ CHEM 40302 Inorganic Chemistry II ⁸ CHEM Electives ¹⁰ 1 - 3							
Semester Five [17 Credits] ! CHEM 40567 Physical Chemistry for Life Sciences 7 CHEM 30105 Analytical Chemistry I 7 CHEM 30107 Analytical Chemistry Laboratory I CHEM Core Requirement Sassian Kent Core Requirement Sassian Semester Six [14 Credits] CHEM 30284 Introductory Biological Chemistry 6 CHEM 40568 Elementary Physical Chemistry Laboratory 5 Inforeign Language 3 Semester Seven (15 Credits) I CHEM 40302 Inorganic Chemistry II 7 CHEM 40302 Inorganic Chemistry II 7 CHEM 40302 Inorganic Chemistry II 7 CHEM Electives 10 I - 3 CHEM Electives 10 I - 3 CHEM Electives 10 CHEM Electives 10 CHEM Electives 10 CHEM 5050 CHEM 5050 CHEMISTRY II 7 CHEMISTRY CHEMISTRY CHEMISTRY II 7 CHEMISTRY CHEMISTRY II 7 CHEMISTRY CHEMISTRY II 7 CHEMISTRY CHEMISTRY CHEMISTRY II 7 CHEMISTRY CHEMISTRY CHEMISTRY II 7 CHEMISTRY CH		,				ND3	
! CHEM 40567 Physical Chemistry for Life Sciences 7 CHEM 30105 Analytical Chemistry I 7 CHEM 30107 Analytical Chemistry Laboratory I Foreign Language 3 3 - 5 Kent Core Requirement 3 Kent Core Requirement 3 Kent Core Requirement 4 CHEM 30284 Introductory Biological Chemistry 6 CHEM 40568 Elementary Physical Chemistry Laboratory 5 Foreign Language 3 CHEM 40568 Elementary Physical Chemistry Laboratory 5 Kent Core Requirement 3 College General Requirement 3 College General Requirement 9 CHEM 40302 Inorganic Chemistry II 7 CHEM 40302 Inorganic Chemistry II 7 CHEM Electives 10 CHEM Electives 10 ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■			4 - 5				
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CHEM 30284 Introductory Biological Chemistry ⁶ CHEM 40568 Elementary Physical Chemistry Laboratory ⁵ Foreign Language ³ Kent Core Requirement College General Requirement ⁹ Semester Seven [15 Credits] ! CHEM 40302 Inorganic Chemistry II ⁷ CHEM Electives ¹⁰ 1 - 3		·					
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Kent Core Requirement College General Requirement 9 Semester Seven [15 Credits] ! CHEM 40302 Inorganic Chemistry II 7 CHEM Electives 10 1 - 3					•		
College General Requirement 9 3 Semester Seven [15 Credits] ! CHEM 40302 Inorganic Chemistry II 7 2		3					
Semester Seven [15 Credits] ! CHEM 40302 Inorganic Chemistry II ⁷ 2 ■ CHEM Electives ¹⁰ 1 - 3 ■							
! CHEM 40302 Inorganic Chemistry II ⁷ CHEM Electives ¹⁰ 1 - 3 ■			3				
CHEM Electives ¹⁰ 1 - 3 ■							
		CHEM Electives 10	1 - 3				
Semester Eight [12 Credits]		General Electives 11	12				
General Electives ¹¹ 12	emester	General Electives ¹¹ Eight [12 Credits]	12				

Graduation Requirements Summary

	Minimum Total Hours	Minimum Upper-Division Hours	Minimum Kent Core Hours	Minimum	
	Millimum Total Hours	30000 - 40000 level course	Williman Rent Core Hours	Major GPA	Overall GPA
Ī	120	42	36	2.000	2.000



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- 1. UC 10097 not required of transfer students with 25 credits (excluding College Credit Plus) or students age 21+ at time of admission.
- 2. Offered in fall and summer only
- 3. Fulfills College General Requirements.
- 4. If CHEM 20481 was taken, select CHEM 20482; If CHEM 30481 was taken, select CHEM 30482. Courses typically offered in spring and summer only.
- 5. Offered in spring only
- 6. Offered in spring and summer only
- 7. Offered in fall only
- 8. A minimum C (2.000) grade must be earned in CHEM 30107 to fulfill the writing-intensive requirement.
- One additional course taken from the Kent Core Social Sciences courses in the following Arts and Sciences disciplines: Anthropology (ANTH), Applied Conflict Management (CACM), Geography (GEOG), Criminology and Justice Studies (CRIM), Political Science (POL), Psychology (PSYC) or Sociology (SOC). The course may not be from the student's major.
- 10. CHEM Electives (1-3 credits)

Choose from the following:						
CHEM 30050 Introduction to Materials Chemistry (2)	CHEM 30106 Analytical Chemistry II (2)					
CHEM 40248 Advanced Biological Chemistry (3)	CHEM 40303 Inorganic Chemistry III (2)					
CHEM 40477 Intermediate Organic Chemistry Laboratory (1)	CHEM 40483 Intermediate Organic Chemistry (1)					
CHEM 40796 Individual Investigation (1 - 2)	Chemistry Department-approved electives (1 - 3)					

^{11.} Number of general elective credit hours required depends on meeting minimum 120 credit hours and minimum 42 upper-division hours.

Foreign Language Note:

Students pursuing a Bachelor of Arts degree in the College of Arts and Sciences must have the equivalent of Elementary I and II in any language, plus one of the following options:

- A. Intermediate I and II of the same language
- B. Elementary I and II of a second language
- C. Any combination of two courses from the following list:
 - Intermediate I of the same language
 - b. MCLS 10001 Introduction to Structural Concepts for Language Students
 - c. MCLS 20000 Global Literacy and Cultural Awareness
 - d. MCLS 20091 Seminar: Global Literacy Case Studies
 - e. MCLS 21417 Multiculturalism in Today's Germany
 - f. MCLS 22217 Diversity in Today's Russia
 - g. MCLS 23217 The Francophone Experience
 - h. MCLS 28404 The Latin American Experience
 - i. MCLS 28405 The Spanish Experience

All students with prior foreign language experience should take the foreign language placement test to determine the appropriate level at which to start. Some students may begin their university foreign language experience beyond the Elementary I level and will complete the requirement with fewer credit hours and fewer courses. This may be accomplished by: (1) passing a course beyond Elementary I through Intermediate II level or (2) receiving credit through Credit by Exam (CBE), the College Level Examination Program (CLEP), the Advanced Placement (AP) exam or credit through the International Baccalaureate (IB) program; or (3) being designated a "native speaker" of a non-English language (consult with the College of Arts and Sciences Advising Office for additional information). When students complete the requirement with fewer than 14 credit hours and four courses, they will complete remaining hours with general electives.

University Requirements: Bachelor's degree-seeking students must meet Kent Core (general education requirements), diversity, writing-intensive and experiential learning requirements. For more information about these requirements, please read the following sections in the University Catalog: Kent Core – www.kent.edu/catalog/kent-core; Diversity Course Requirement – www.kent.edu/catalog/kent-core; Experiential Learning Requirement – www.kent.edu/catalog/wic; Experiential Learning Requirement – www.kent.edu/catalog/elr.

Attribute Legend: DD Diversity–Domestic; DG Diversity–Global; ELR Experiential Learning; KAD Kent Core Additional; KBS Kent Core Basic Sciences; KCM Kent Core Composition; KFA Kent Core Fine Arts: KHU Kent Core Humanities; KMC Kent Core Mathematics and Critical Reasoning; KSS Kent Core Social Sciences; WIC Writing Intensive