

# Roadmap: Chemistry - Biological Chemistry - Pre-Medicine/Pre-Osteopathy/Pre-Dentistry - Bachelor of Science

[AS-BS-CHEM-BIOP] College of Arts and Sciences Department of Chemistry Catalog Year: 2009-2010

Critical requirements are boldface in shaded areas

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Course Subject and Title	Credit Hours	Upper Division	Min. Grade	Important Notes	
Semester One: [17 Credit Hours]					
BSCI 10120 Biological Foundations	4				
CHEM 10060 General Chemistry I or CHEM 10960 Honors General Chemistry	4-5				
CHEM 10062 General Chemistry I Laboratory	0-1			Take only if CHEM 10060 is selected	
MATH 12021 Calculus for Life Sciences	4			Is approved as proficiency to fulfill LER Mathematics and Critical Reasoning; see note 1 on page 2	
ENG 11011 College Writing I or Humanities or Fine Arts	3			Enrollment based on placement tests; ENG 11011 fulfills LER Composition. Visit www.kent.edu/catalog and search "LER" for course lists	
US 10097 Destination Kent State: FYE	1			Not required for transfer students with 25 credits	
Semester Two: [14 Credit Hours]					
CHEM 10061 General Chemistry II or CHEM 10961 Honors General Chemistry	4-5			If CHEM 10060 was taken; select CHEM 10061; If CHEM 10960 was taken, select CHEM 10961	
CHEM 10063 General Chemistry II Laboratory	0-1			Take only if CHEM 10061 is selected	
MATH 12022 Probability and Statistics for Life Sciences	3			See note 1 on page 2	
LER Humanities or Fine Arts  or ENG 11011 College Writing I	3			Enrollment based on placement tests; ENG 11011 fulfills LER Composition. Visit	
LER Social Sciences	3			www.kent.edu/catalog and search "LER" and "diversity" for course lists; see note 3 on page 2	
Semester Three: [15 Credit Hours]					
BSCI 30156 Elements of Genetics	3	-			
CHEM 30475 Organic Chemistry Laboratory I	1	-			
CHEM 30481 Organic Chemistry I	3			Offered in fall only	
PHY 13001 General College Physics I	4			Fulfills LER Additional	
PHY 13021 General College Physics Laboratory I	1			Fulfills LER Basic Sciences	
ENG 21011 College Writing II	3			Fulfills LER Composition	
Semester Four: [15 Credit Hours]					
BSCI 30140 Cell Biology	4				
CHEM 30301 Inorganic Chemistry I	2	-		Offered in spring only	
CHEM 30476 Organic Chemistry Laboratory II	1	•		Offered in spring only	
CHEM 30482 Organic Chemistry II	3			Offered in spring only	
PHY 13002 General College Physics II	4			Eulfille I ED Rasio Sciences	
PHY 13022 General College Physics Laboratory II	1			Fulfills LER Basic Sciences	
Semester Five: [14-15 Credit Hours]					
BSCI 40430 Animal Physiology	3				
CHEM 40567 Basic Concepts of Physical Chemistry	4	-		Offered in fall only	
Foreign Language Elementary I	4-5				
LER Humanities	3			Should fulfill diversity requirement; visit www.kent.edu/catalog; see note 3 on page 2	



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Semester Six: [16-17 Credit Hours]					
BSCI 30171 General Microbiology	4	•			
CHEM 40245 Biochemical Foundations of Medicine	4			Typically offered in spring and summer only	
CHEM 40568 Elementary Physical Chemistry Laboratory	1	-		Offered in spring only	
Foreign Language Elementary II	4-5				
LER Fine Arts	3			Should fulfill diversity requirement if not satisfied earlier; visit <a href="www.kent.edu/catalog">www.kent.edu/catalog</a> and search "LER" and "diversity" for course lists	
Semester Seven: [15 Credit Hours]					
CHEM 30105 Analytical Chemistry I	3	-		Offered in fall only	
CHEM 30107 Analytical Chemistry Laboratory I	1	-	С	Fulfills writing-intensive course requirement; offered in fall only	
CHEM 40248 Advanced Biological Chemistry	3	-		Offered in fall only	
LER Additional	3			Should fulfill diversity requirement if not	
LER Social Sciences	3			satisfied earlier; see note 3 below	
Concentration Elective (upper division)	2			See note 2 below	
Semester Eight: [13-15 Credit Hours]					
CHEM 40251 Advanced Biological Chemistry Laboratory	2	•	С	Fulfills writing-intensive course requirement offered in spring only	
CHEM 40263 Physical Biochemistry	3	-		Offered in spring only	
Concentration Elective (upper division)	3			See note 2 below	
General Electives (lower or upper division)	5-7			Number of credits required depends on meeting minimum 121 credit hours and 42 upperdivision hours; see note 4 below	

**Graduation Requirements Summary** 

Total Hours	Upper-Division Liberal Education		Diversity Course	Writing-Intensive	Minimum	
Total Hours	Hours	Requirements Hours	Global / Domestic	willing-intensive	Major GPA	Overall GPA
121	42	45	LER or General Electives	CHEM 30107 or CHEM 40251	2.0	2.0

Note 1: The following three courses may be taken as a package instead of MATH 12021 and 12022: MATH 12002 Analytic Geometry and Calculus I (5), MATH 12003 Analytic Geometry and Calculus II (5) and MATH 30011 Basic Probability and Statistics (3).

Note 2: Concentration electives (5 credit hours), choose from the following:

BSCI 30518 Vertebrate Anatomy F	4	CHEM 40302 Inorganic Chemistry II F	2
BSCI 40174 Immunology <sup>S</sup>	3	CHEM 40365 Biological Inorganic Chemistry	3
BTEC 40191 Seminar: Recent Developments in Biotechnology	1	CHEM 40477 Intermediate Organic Chemistry Laboratory <sup>F</sup>	1
BTEC 40220 Bioinformatics	2	CHEM 40483 Intermediate Organic Chemistry F	1
CHEM 30106 Analytical Chemistry II S	2	CHEM 40796 Individual Investigation	1-3
CHEM 40295 Special Topics in Biochemistry	1-3	F Offered in fall only S Offered in spring	g only

- Note 3: The following LER courses are strongly recommended: COMM 15000 Introduction to Human Communication (Additional); ECON 22060 Principles of Microeconomics (Social Sciences); PHIL 21001 Introduction to Ethics (Humanities); PSYC 11762 General Psychology (Social Sciences); SOC 12050 Introduction to Sociology (Social Sciences).
- Note 4: The following elective courses are recommended: ECON 42086 Economics of Health Care; PSYC 40111 Abnormal Psychology; PSYC 41363 Biopsychology; SOC 42563 Sociology of Health and Health Care.



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#### Liberal Education Requirements (LER)

Students must complete a minimum 36 credit hours of Liberal Education Requirements. Colleges or degree programs may specify certain courses to fulfill the requirements. Courses in the students' major field will not count toward the completion of any LER. Honors equivalents shall satisfy the LER. None of the courses on the LER list may be taken with a pass/fail grade.

#### **Diversity Course Requirement**

Students must complete a two-course diversity requirement, consisting of one with a domestic focus and one with a global focus. One course must be come from the LER and cannot be in the student's major. The second course may be taken as a second LER; or within a major or minor; or as a general elective; or, with dean's approval, by completing one semester of study in another country.

#### Writing-Intensive Course Requirement

Students must complete a one-course writing-intensive requirement in their major and earn minimum C (2.00) grade.

#### **Upper-Division Requirement**

In general, baccalaureate programs require the successful completion of at least 39 upper-division (numbered 30000 to 49999) credit hours of coursework. Programs in the College of Arts and Sciences require a minimum of 42 hours of upper-division coursework.