

**2004-2005**  
**BIOCHEMISTRY MAJOR – BACHELOR OF ARTS DEGREE**  
**DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY**

<b>MAJOR REQUIREMENTS</b>	<b>ALTERNATIVES</b>
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<i>Course</i>	<i>Title</i>	<i>Hrs</i>	<i>Tr</i>	<i>UD</i>
CHM 113	Gen Chemistry	4		
CHM 115	Gen Chemistry	5		
CHM 302	Environmental Chem.	3		
CHM 331	Gen Organic Chem	3		
CHM 335	Gen Org Chem Lab	1		
CHM 332	Gen Organic Chem	3		
CHM 336	Gen Org Chem Lab	1		
CHM 341	Elem Physical Chem	3		
BCH 461	Gen Biochemistry	3		
BCH 462	Gen Biochemistry	3		
BCH 467	Analy. Biochem. Lab	3		
BCH/CHM	Elective	3		
BCH/CHM	Elective	3		

**Related Courses**

BIO 187	General Biology	4		
BIO 188	General Biology	4		
*BIO 340	Gen Genetics (or BIO 353)	4		
MAT 251	Calc for Life Sciences	3		
PHY 101	Intro Physics	4		

<i>Course</i>	<i>Title</i>	<i>Hrs</i>	<i>Tr</i>	<i>UD</i>
*CHM 113 and CHM 116 for CHM 113 and CHM 115				
*CHM 117 and CHM 118 for CHM 113 and CHM 115				
CHM 325	Analytical Chemistry	3		
CHM 317	Organic Chem. Majors	3		
CHM 319	Org. Chem. Lab Majors I	1		
CHM 318	Org. Chem. Majors II	3		
CHM 320	Org Chem. Lab II	1		
CHM 345	Physical Chemistry I	3		

Elective choices include: **CHM 302 or 325, 326, 327, 328, 392, 424, 452, 453, 471, 481; BCH 392, 463, 464, 465**

*MBB 245	Cell. & Molecular Bio.	3		
*MBB 343	Genetic Engr. & Society	4		
BIO 350	Applied Genetics	4		
MAT 210	Brief Calculus	3		
PHY 111, 112, 113, 114		8		

\*Major must include minimum of 56 hours if the combination of CHM 113/116 or 117/118 for CHM 113/115 or the combination of MBB 245/343 for BIO 187/188 or BIO 353 for BIO 340 is used, the deficient hours will have to be made up with a CHM or BCH elective. Plus 12 hours upper division at ASU, "C" minimum in all upper division courses.

<b>UNIVERSITY GENERAL STUDIES</b>	<b>COLLEGE OF LIBERAL ARTS &amp; SCIENCES</b>
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First Year Comp ("C" minimum) \_\_\_\_\_  
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Literacy/Critical Inquiry (L) \_\_\_\_\_  
 Literacy/Critical Inquiry (L upper division)  
 (satisfied by major)  
 Mathematical Studies (CS) \_\_\_\_\_  
 Mathematical Studies (MA) \_\_\_\_\_

Humanities/Fine Art (HU)  
 (6-9 hours, HU and SB must total 15 hours)  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Social Behavioral Sciences (SB)  
 (6-9 hours, one HU or SB must be upper division)  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

HU and SB Awareness Areas (must cover all three)  
 Cultural (C) \_\_\_\_\_ Global (G) \_\_\_\_\_ Historical (H) \_\_\_\_\_

Second Language \_\_\_\_\_  
 (proficiency through intermediate level, "C" min.)

Humanities (6 hours, upper division, choose from:  
 AFH, CSH, ENG, HPS, HUM, PHI, REL, WSH)  
*All second language literature or civilization courses.*  
*Can NOT double count with University General Studies.*

Social Behavioral Sciences (6 hours, upper division  
 choose from: AFS, ASB, CSS, ECN, GCU, HST, PGS,  
 POS, SOC, WST **except for WST 413, 464 and 470**)  
*Can NOT double count with University General Studies.*

Bridge Course (to view refer to:  
<http://clas.asu.edu/students/roadmap/degreerequirements/>)

Natural Science and Mathematics (satisfied by major)

**Required: 120 total hours, 45 upper division hours, 30 hours in residence at ASU, 2.00 minimum GPA**

The schedule presented below is a model program of study that includes all the departmental requirements for courses in chemistry and related subjects. It presents a sequence that accommodates prerequisites for the required courses. Students and advisers should recognize that the order of courses in this outline is a model program and many other plans will work as well.

## Year 1

Semester (Fall)	hours	Semester (Spring)	hours
CHM 113 General Chemistry	4	CHM 115 General Chemistry	5
MAT 251 Calculus for Life Sciences	3	BIO 187 General Biology	4
ENG 101 First-year Comp.	3	PHY 101 University Physics	4
		ENG 102 First-year Comp.	3
*Non-major	<u>5-7</u>		
	15-17		16

## Year 2

Semester (Fall)	hours	Semester (Spring)	hours
BIO 188 General Biology	4	CHM 302 Environmental Chem.	3
CHM 331 Gen. Organic Chem.	3	BIO 340 General Genetics	4
CHM 335 Gen. Organic Chem. Lab	1	CHM 332 Gen. Organic Chem.	3
		CHM 336 Gen. Organic Chem. Lab	1
*Non-major	<u>7-9</u>	*Non-major	<u>1-6</u>
	12-17		12-17

## Year 3

Semester (Fall)	hours	Semester (Spring)	hours
BCH 461 General Biochemistry	3	BCH 462 Gen Biochemistry	3
CHM 341 Elem. Physical Chemistry	3	BCH 467 Analytical Biochem. Lab	3
*Non-major	<u>6-8</u>	*Non-major	<u>6-8</u>
	12-15		12-15

## Year 4

Semester (Fall)	hours	Semester (Spring)	hours
CHM or BCH elective 1	3	CHM or BCH elective 2	3
*Non-major	<u>9-14</u>	*Non-major	<u>9-14</u>
	12-17		12-17

\* Non-major courses: Courses that satisfy university general studies and College of Liberal Arts and Sciences graduation requirements and any other interests the student chooses to pursue.

@ May be taken any semester to complete the chemistry hours requirement. NOTE: only 3 hrs. of credit for CHM/BCH elective is required.