

**LIBERAL ARTS AND SCIENCES: BACHELOR OF SCIENCE  
BIOCHEMISTRY**

<b>VI. MAJOR PROGRAM: 58 S.H.</b>			
<b>A. Required CHM: 34 S.H.</b>		<b>Gr.</b>	<b>S.H.</b>
CHM 100 General Chemistry I			4
CHM 102 General Chemistry II			4
CHM 214VL Organic Chemistry I			4
CHM 216WI Organic Chemistry II			4
CHM 230QLWI Analytical Chemistry I			4
CHM 310 Biochemistry I			4
CHM 312 Biochemistry II			4
CHM 314 Physical Chemistry I			4
CHM 380 Senior Seminar in Chem.			2
<b>B. Required BIO: 8 S.H.</b>			
BIO 104 Principles of Biology			4
BIO 106 Intro. To Zoology <b>OR</b> BIO 108 Intro. To Botany			4
<b>C. GENETICS/MOLEC: 3 S.H.</b>			
BIO 216QL Genetics <b>OR</b> BIO 346 Molecular Biology			3
<b>D. CELL Elective: 3 S.H.</b>			
BIO 350 Cell Biology	Select one course from this block		3
BIO 354 Developmental Biology			3
BIO 356 Immunology			3
<b>E. CHM Electives: 4/10 S.H. **</b>			
CHM 300 Level Elective			3-4
CHM 300 Level Elective			3-4
CHM 300 Level Elective			3-4
CHM 37X Research in Chemistry *			1-4*
CHM 39X Chemistry Elective			1-4*
<b>F. BIO Elective: 0/6 S.H. **</b>			
Any course from VI.C or VI.D only if not used to satisfy VI.C or VI.D.			3
BIO 224 Appl. Env. Microbiology			3
BIO 228 Human Physiology			3
BIO 232 Plant Physiology			3
BIO 300 Comparative Animal Physiology			3
BIO 306 Food Microbiology			3
BIO 330 Histology			3
BIO 336 Medical Microbiology			3
BIO 370 Research in Biology *			1-3*
BIO 390 Internship in Biology			3-6*
BIO 460 Cancer Biology			3
<b>VII. CONCOMITANT COURSES: 16 S.H.</b>			
<b>A. PHYSICS: 8 S.H.</b>			
PHY 100 Physics I			4
PHY 102 Physics II			4
<b>B. MATHEMATICS: 8 S.H.</b>			
MAT 181 Calculus I			4
MAT 182 Calculus II			4
<b>TOTAL SEMESTER HOURS</b>			

<b>VIII. GRADUATION CLEARANCE</b>	
A. Cumulative Q.P.A.	_____
B. Total Semester Hours	
a. General Education	_____
b. Major Program	_____
c. Concomitant	_____
<b>GRAND TOTAL</b>	_____
C. Comprehensive Exam Passed	
yes	no
Advisor's Signature _____	
Date _____	

<b>NOTES</b>	
* The combined credit total toward the major program for CHM 370, CHM 371 CHM 372, CHM 373 & BIO 370 may not exceed 4 S.H.	
**The combined credits between Section E and Section F should total 10 S.H. with a minimum of 4 S.H. from Section E.	
A minimum of 120 s.h. are required for graduation.	

Program Code: ULASBIOCH  
Effective Date of Program: January 19, 2015  
Reviewed: 3/14

STUDENT:



STUDENT ID NUMBER:

## COLLEGE OF LIBERAL ARTS & SCIENCES • BS • BIOCHEMISTRY

Program Code **ULASBIOCH**Version Number: **Fall 2011**Effective Date: **01/19/2015**

### GENERAL EDUCATION

I. UNIVERSITY CORE (12 credits)	RC	CR	GR
<b>A. Oral Communication:</b> COM 10 or above			
COURSE:	3		
<b>B. Written Communication:</b> ENG 23, 24, or 25			
COURSE:	3		
<b>C. Mathematics:</b> MAT 17 or above			
COURSE:	3		
<b>D. Wellness:</b> Any 3-credit HEA course			
COURSE:	3		

  

II. UNIVERSITY DISTRIBUTION (15 credits)	RC	CR	GR	CAC
<b>A. Natural Sciences:</b> Any lab or non-lab course with prefix AST, BIO, CHM, ENV, GEL, MAR, NSE, or PHY; or certain GEG courses (see note at right)				
COURSE:	3			
<b>B. Social Sciences:</b> Any course with prefix ANT, CRJ, ECO, HIS, INT, MCS, PSY, POL, SOC, SSE, or SWK; or certain GEG courses (see note at right)				
COURSE:	3			
<b>C. Humanities:</b> Any course with prefix ENG, HUM, PAG, PHI, WRi, WGS, or Modern Language				
COURSE:	3			
<b>D. Arts:</b> Any course with prefix ARC, ARH, ART, CDE, CDH, CFT, DAN, FAR, FAS, MUP, MUS, or THE				
COURSE:	3			
<b>E. Free Elective:</b> Any course carrying university credit				
COURSE:	3			

III. COMPETENCIES ACROSS THE CURRICULUM	RC	CR	GR	CAC
<b>A. Writing Intensive (WI)</b> (9 credits)				
COURSE:	3			WI
COURSE:	3			WI
COURSE:	3			WI
<b>B. Quantitative Literacy (QL)</b> (3 credits)				
<b>Computer-Intensive (CP)</b> (3 credits)				
COURSE:	3			
<b>C. Visual Literacy (VL)</b> (3 credits)				
<b>Communication-Intensive (CM)</b> (3 credits)				
COURSE:	3			
<b>D. Cultural Diversity (CD)</b> (3 credits)				
COURSE:	3			CD
<b>E. Critical Thinking (CT)</b> (3 credits)				
COURSE:	3			CT

A Competency Across the Curriculum (CAC) course is not a separate course, but rather an overlay that is "double counted" as fulfilling both the CAC requirement and another requirement in either General Education (except for the University Core), the major, or the minor.

**RC** = Minimum required number of credits  
**CR** = Credits earned (fill in number of credits)  
**GR** = Grade earned (fill in letter grade)  
**CAC** = Competency Across the Curriculum (fill in designation)

**NOTE:** GEG courses with a lab and 40, 322, and 323 may be used in II.A. and GEG courses 40, 204, 274, 304, 322, 323, 324, 347, 380, and 394 may NOT be used in II.B.

IV. COLLEGE DISTRIBUTION (33 credits)	RC	CR	GR	CAC
<b>A. Natural Science, Mathematics, and Computer Science<sup>#</sup> (6 credits):</b> Choose one course in each subcategory.				
<b>1. Natural Science with Lab:</b> AST, BIO, CHM, ENV, GEL, PHY, or MAR; or GEG (see note at right)				
COURSE:	3			
<b>2. Elective:</b> MAT, CSC, AST, BIO, CHM, ENV, GEL, PHY, or MAR; or GEG (see note at right)				
COURSE:	3			
<b>B. Social Science (9 credits):</b> Choose one course in each subcategory.				
<b>1. Elective:</b> HIS, ANT, GEG (see note at right), or POL				
COURSE:	3			
<b>2. Elective:</b> PSY, SOC, CRJ, or SWK				
COURSE:	3			
<b>3. Elective:</b> ANT, HIS, ECO, GEG (see note at right), PSY, POL, SOC, CRJ, or SWK				
COURSE:	3			

C. Humanities (9 credits):	RC	CR	GR	CAC
Choose one course in each subcategory.				
<b>1. Elective:</b> PAG*, ENG, WRI, or HUM				
COURSE:	3			
<b>2. Elective:</b> Modern Language (103 or above) or PHI				
COURSE:	3			
<b>3. Elective:</b> PAG*, ENG, WRI, HUM, Modern Language (103 or above), or PHI				
COURSE:	3			
<b>D. Free Electives (9 credits):</b> Choose any university courses that count toward graduation.				
COURSE:	3			
COURSE:	3			
COURSE:	3			

**NOTE:** GEG courses with a lab and 40, 322, and 323 may be used in IV.A. and GEG courses 40, 204, 274, 304, 322, 323, 324, 347, 380, and 394 may NOT be used in IV.B.

<sup>#</sup> Students in the College of Liberal Arts and Sciences are required to take at least one course in Biological Science (BIO) and at least one course in Physical Science (AST, CHM, ENV, GEL, PHY, MAR, GEG with lab, or GEG 40, GEG 322, or GEG 323), and at least one of which must be a lab (each course may be counted in either sections II.A. or IV.A).

\* Excludes PAG 011 and PAG 012

## B.S. Biochemistry Example 4-Year Schedule

This suggested course plan has 117-123 credit hours. Graduation requires 120 total credit hours.

### Freshman Year

Fall Semester	Cr	Spring Semester	Cr
CHM 100 - Gen Chem I	4	CHM 102 - Gen Chem II	4
BIO 104 - Princ of Biology	4	BIO 106 - Intro. to Zoology	4
MAT 105 - College Algebra	3	MAT 106 - Trigonometry	3
Gen Ed Course	3	Gen Ed Course	3
Gen Ed Course	3	Gen Ed Course	3
<b>Total</b>	<b>17</b>	<b>Total</b>	<b>17</b>

\*Instead of MAT 105 and 106, Precalculus (MAT 115) or Calculus I (MAT 181) could be taken.

### Sophomore Year

Fall Semester	Cr	Spring Semester	Cr
CHM 214 - Organic Chem I	4	CHM 216 - Organic Chem II	4
PHY 100 - Physics I	4	PHY 102 - Physics II	4
MAT 181 - Calculus I	4	MAT 182 - Calculus II	4
Gen Ed Course **	3	BIO 310 - Genetics	3
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>15</b>

\*\*Instead of BIO106 in the Spring Freshman Year; BIO108 - Intro. to Botany could be taken.

### Junior Year

Fall Semester	Cr	Spring Semester	Cr
CHM 310 - Biochem I	4	CHM 312 - Biochem II	4
BIO 346 - Molecular Biology	4	BIO 350 - Cell Biology	3
CHM 230 - Analytical Chem I	4	CHM Elective	3-4
Gen Ed Course	3	Gen Ed Course	3
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>13-14</b>

### Senior Year

Fall Semester	Cr	Spring Semester	Cr
CHM 314 - Physical Chem I	4	CHM 380 - Senior Seminar	2
BIO or CHM Elective	1 - 4	Free Elective	3
Free Elective	3	Free Elective	3
Gen Ed Course	3	Gen Ed Course	3
Gen Ed Course	3	Gen Ed Course	3
<b>Total</b>	<b>11 - 14</b>	<b>Total</b>	<b>14 - 16</b>

Pre-health profession students may want to take BIO 121 and BIO 122 (Anatomy and Physiology I and II) or BIO 264 and BIO 234 (Comparative Anatomy and Animal Physiology) as free electives in the Fall and Spring of the third or fourth year.

### Chemistry Electives (4-7 Cr required)

Course	Cr
CHM 316 - Physical Chem II	4
CHM 318 - Adv Biochemistry	3
CHM 320 - Adv Inorganic Chem	4
CHM 326 - Adv Organic Chem	3
CHM 336 - Adv Physical Chem	3
CHM 340 - Analytical Chem II	4
CHM 351 - Selected Topics	1 – 6
CHM 370 - Research in Chem I	1 - 3*
CHM 371 - Research in Chem II	1 - 3*
CHM 372 - Research in Chem III	1 - 3*
CHM 373 - Research in Chem IV	1 - 3*
CHM 390 - Internship in Chem	1 – 4

### Biology Electives (0-3 Cr required)

Course	Cr
BIO 224 - Appl Env Microbiology	3
BIO 232 - Plant Physiology	3
BIO 234 - Animal Physiology	3
BIO 336 - Medical Microbiology	3
BIO 370 - Research in Biology	1 - 3*
BIO 390 - Internship in Biology	3 – 6

\*The sum total of CHM370, CHM371, CHM372, CHM373 & BIO 370 may not exceed 4 Cr. Also, some of these electives (CHM and BIO) are not offered every semester.