

<b>PROGRAM CODE</b> ULASBIOCHP	<b>COLLEGE OF LIBERAL ARTS AND SCIENCES</b>
<b>EFFECTIVE DATE</b> FALL 2020	
<b>VERSION NUMBER</b> 2208	
<b>BIOCHEMISTRY</b>	
<i>BACHELOR OF SCIENCE</i>	
<b>PHARMACY TRACK</b>	
<b>STUDENT:</b>	<b>STUDENT ID NUMBER:</b>

*MAJOR PROGRAM*

<b>Chemistry</b>		
COURSE	CR	GRADE
CHM 100: GENERAL CHEMISTRY I	4	
CHM 102: GENERAL CHEMISTRY II	4	
CHM 214: ORGANIC CHEMISTRY I	4	
CHM 216: ORGANIC CHEMISTRY II	4	
CHM 230: 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 CHEMISTRY	2	
<b>TOTAL CREDITS</b>	<b>34</b>	

<b>Biology</b>		
COURSE	CR	GRADE
BIO 104: PRINCIPLES OF BIOLOGY	4	
BIO 106: INTRO TO ZOOLOGY	4	
BIO 120: ANATOMY AND PHYSIOLOGY I	4	
BIO 122: ANATOMY AND PHYSIOLOGY II	4	
BIO 224: APPLIED ENV. MICROBIOLOGY	3	
<b>TOTAL CREDITS</b>	<b>19</b>	

<b>Electives</b>		
COURSE	CR	GRADE
CHM 3XX:	3-4	
CHM 37X: RESEARCH IN CHEMISTRY	1-2 *	
CHM 39X: CHEMISTRY ELECTIVE	1-2 *	
BIO 346: MOLECULAR BIOLOGY	3	
BIO 350: CELLULAR BIOLOGY	3	
BIO 356: IMMUNOLOGY	3	
<b>TOTAL CREDITS</b>	<b>4</b>	

*CONCOMITANT COURSES*


<b>Physics</b>		
COURSE	CR	GRADE
PHY 100: PHYSICS I	**	
PHY 102: PHYSICS II	**	
<b>Mathematics</b>		
COURSE	CR	GRADE
MAT 181: CALCULUS	**	
MAT 140: APPLIED STATISTICAL METHODS OR MAT 150: INTRODUCTION TO BIOSTATISTICS	3	
<b>TOTAL CREDITS</b>	<b>3</b>	

<b>Free Electives</b> <i>CHOOSE ANY COURSES THAT COUNT TOWARDS GRADUATION</i>		
COURSE	CR	GRADE
<b>TOTAL CREDITS</b>	<b>3-15</b>	

\* THE COMBINED CREDIT TOTAL TOWARD THE MAJOR PROGRAM FOR CHM 37X & CHM 39X MAY NOT EXCEED 2 CREDITS.

\*\* COURSES REQUIRED FOR THE MAJOR THAT ALSO SATISFY GEN ED REQUIREMENT UNDERSTANDING SCIENCE AND TECHNOLOGY.

**GRADUATION REQUIREMENTS**

		<b>REQUIRED</b>	<input checked="" type="checkbox"/>		<b>REQUIRED</b>	<input checked="" type="checkbox"/>
	GENERAL EDUCATION CREDITS	<b>42-45</b>		COMPREHENSIVE EXAM	<b>PASS</b>	
	PROGRAM CREDITS (MINIMUM)	<b>60</b>		MINIMUM QPA OVERALL	<b>2.0</b>	
	ELECTIVES	<b>3-15</b>		MINIMUM QPA IN MAJOR	<b>2.0</b>	
	TOTAL CREDITS	<b>120</b>				

NAME	EFFECTIVE DATE AUGUST 27, 2018
ID NUMBER	VERSION 2188

# KUTZTOWN

## UNIVERSITY

### DEGREE REQUIREMENTS

## GENERAL EDUCATION

### Student Learning Outcomes (SLO)

Upon completion of the requirements for the General Education Program, students will be able to:

- 1 communicate clearly and effectively orally and in writing.
- 2 apply scientific and quantitative reasoning to solve problems and increase knowledge.
- 3 apply skills in critical analysis and reasoning for the interpretation of data.
- 4 engage critically with creative or artistic works.
- 5 demonstrate the ability to retrieve, interpret, evaluate, and use information.
- 6 analyze the role of values, ethics, diversity, and multiple perspectives in local and global society.
- 7 demonstrate an understanding of various models for the development of the whole person.

Completion of the KU General Education program will give students opportunities to:

- 8 explore concepts, ideas, and methods from a variety of disciplines.

Use this checksheet to plan your degree program. Meet every semester with your academic advisor to be sure that you are taking courses that are required to obtain the degree you are seeking. Discuss your goals and choose courses that will help you to attain them. Get the most out of your education by taking advantage of everything that Kutztown University has to offer.

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**TOTAL GENERAL EDUCATION CREDITS 42-45**

FIND A FULL EXPLANATION OF THE GENERAL EDUCATION PROGRAM AT [WWW.KUTZTOWN.EDU](http://WWW.KUTZTOWN.EDU)

<b>First Year Seminar: Discovering College</b>	<b>CREDITS REQUIRED</b>	<b>3</b>
THIS COURSE MEETS SLO <b>5</b> & <b>7</b>		<b>CREDITS EARNED:</b>

COURSE NUMBER	COURSE NAME	CR	GR
FYS 100	First Year Seminar		

TRANSFER STUDENTS TRANSFERRING 15 CREDITS OR MORE AND NOT TRANSFERRING AN FYS OR FYE COURSE MAY SELECT ANY ADDITIONAL COURSE FROM SECTIONS A, B, C, OR D TO MEET THEIR FYS REQUIREMENT

TRANSFER ELECTIVE:

<b>A</b>	<b>Communicating With And About the World</b>	<b>CREDITS REQUIRED</b>	<b>12</b>
THESE COURSES MEET SLO <b>1</b> & <b>5</b>		<b>CREDITS EARNED:</b>	

COURSE NUMBER	COURSE NAME	CR	GR
<b>1</b>	COMPOSITION 100 LEVEL CMP 1__		
<b>2</b>	COMPOSITION 200 LEVEL CMP 2__		
<b>3</b>	SPEAKING		
<b>4</b>	ANY WRITING (A2) OR SPEAKING COURSE (A3) OR FROM THE APPROVED LIST		

COURSES IN CATEGORIES B, C & D MUST BE TAKEN OUTSIDE THE STUDENT'S MAJOR. THE MAJOR IS DEFINED AS THE PREFIX THAT IDENTIFIES THE MAJOR. CONCOMITANT REQUIREMENTS MAY BE TAKEN TO MEET GENERAL EDUCATION REQUIREMENTS.

<b>B</b>	<b>Understanding Self &amp; Others</b>	<b>CREDITS REQUIRED</b>	<b>9</b>
THESE COURSES MEET SLO <b>3</b> & <b>6</b>		<b>CREDITS EARNED:</b>	

COURSE NUMBER	COURSE NAME	CR	GR
<b>1</b>			
<b>2</b>			
<b>3</b>			

<b>C</b>	<b>Understanding Science &amp; Technology</b>	<b>CREDITS REQUIRED</b>	<b>9-12</b>
THESE COURSES MEET SLO <b>2</b> & <b>3</b>		<b>CREDITS EARNED:</b>	

COURSE NUMBER	COURSE NAME	CR	GR
<b>1</b>	SCIENTIFIC INQUIRY		
<b>2</b>	QUANTITATIVE REASONING		
<b>3</b>	ANY COURSE APPROVED FOR C1 OR C2		

<b>D</b>	<b>Understanding &amp; Creating Ideas</b>	<b>CREDITS REQUIRED</b>	<b>9</b>
THESE COURSES MEET SLO <b>4</b> & <b>6</b>		<b>CREDITS EARNED:</b>	

COURSE NUMBER	COURSE NAME	CR	GR
<b>1</b>			
<b>2</b>			
<b>3</b>			

# B.S. Biochemistry Example 4-Year Schedule

## Freshman Year

Fall Semester	Cr
CHM 100 - Gen Chem I	4
BIO 104 - Principles of Biology	4
MAT 105 – College Algebra, MAT 106 - Trigonometry, MAT 115 - Precalculus, or MAT 181 - Calculus I <sup>a</sup>	3 – 4
FYS100 - First Year Seminar	3
Total	14 – 15

Spring Semester	Cr
CHM 102 - Gen Chem II <sup>b</sup>	4
BIO 106 - Intro. to Zoology	4
MAT 181 - Calculus I or MAT 140 Applied Statistical Methods <sup>a+c</sup>	3 – 4
Gen Ed A1 (CMP1XX)	3
Total	14 – 15

## Sophomore Year

Fall Semester	Cr
CHM 214 - Organic Chem I	4
PHY100 - Physics I <sup>a</sup>	4
BIO 224 – Applied Environmental Microbiology	3
Free Elective (MAT 182 Recommended)	3 – 4
Total	14 – 15

Spring Semester	Cr
CHM 216 - Organic Chem II	4
PHY102 - Physics II <sup>a</sup>	4
Gen Ed B1 <sup>d</sup>	3
Gen Ed A2 (CMP 2XX)	3
Total	14

## Junior Year

Fall Semester	Cr
CHM 310 - Biochemistry I	4
BIO 120 – Anatomy and Physiology I	4
Gen Ed B2 <sup>d</sup>	3
Gen Ed D1 <sup>e</sup>	3
Free Elective	3
Total	17

Spring Semester	Cr
CHM 312 - Biochemistry II	4
BIO 122 – Anatomy and Physiology II	4
Gen Ed B3 <sup>d</sup>	3
Gen Ed D2 <sup>e</sup>	3
Free Elective	3
Total	17

## Senior Year

Fall Semester	Cr
CHM 314 - Physical Chem I	4
CHM 230 - Analytical Chemistry 1 <sup>b</sup>	4
Gen Ed A3	3
Gen Ed D3 <sup>e</sup>	3
Free Elective	3
Total	17

Spring Semester	Cr
CHM 380 - Senior Seminar	2
CHM/BIO Elective <sup>f</sup>	4
Gen Ed A4	3
Free Elective	3
Free Elective	3
Total	15

a. Each of these courses also meets Gen Ed category C.

b. CHM 230 requires a C or better in CHM 102.

c. Students may be at a different level of Calculus, but should continue within the MAT sequence depending on initial mathematics course taken.

d. Recommended courses include ECO 12 and a selection of ANT 10, PHI 40, PHI 125, PSY 11, PSY 125, PSY 240, PSY 250, SOC 10, and SOC 122.

e. Recommended courses include PHI 30, PHI 60, and PSY 208.

f. A minimum of 4 credits of Electives are required. Possible CHM electives are listed below.

**Chemistry Electives (4 Cr required)<sup>g</sup>**

<b>Course</b>	<b>Cr</b>
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 - 3
CHM 352 - Selected Topics	1 - 3
CHM 353 - Selected Topics	1 - 3
CHM 370 - Research in Chem I	1 – 3 <sup>h</sup>
CHM 371 - Research in Chem II	1 – 3 <sup>h</sup>
CHM 372 - Research in Chem III	1 – 3 <sup>h</sup>
CHM 373 - Research in Chem IV	1 – 3 <sup>h</sup>
CHM 390 - Internship in Chem	1 – 4 <sup>h</sup>

g. Some of these electives are not offered every semester.

h. The sum total of CHM370, CHM371, CHM372, CHM373, and CHM 390 may not exceed 2 credits toward the major program.

Note that a minimum of 120 Cr are required for graduation (42-45 Cr Gen Ed, 60 Cr Major Minimum, 3-15 Cr Free Electives).