

American International College
School of Business, Arts and Sciences
Program Plan

MAJOR: Biochemistry
Catalog Year: 2019-2020

FRESHMAN	COURSES	CREDITS	TOTAL
FALL	AIC1140, APEX 1 (or AIC1100 Introduction to ACE (3 cr))	1	13
	ENG1201, English Composition	3	
	MAT1840, College Algebra and Trigonometry	4	
	CHE1600, General Chemistry I (includes CHE1602, Review)	4	
	CHE1601, General Chemistry I Lab	1	
SPRING	ENG1202 Analytical Writing	3	15
	MAT2400, Calculus I	4	
	CHE1700, General Chemistry II (includes CHE1702, Review)	4	
	CHE1701, General Chemistry II Lab	1	
	Gen Ed course (Civic/Soc Resp or Human Cult/Exp)***	3	
SOPHOMORE			
FALL	MAT2500, Calculus II with lab (MAT2501)	4	16
	CHE2400, Organic Chemistry I	3	
	CHE2401, Organic Chemistry I Lab	1	
	PHY3400, General Physics I (includes PHY3402, Review) #	4	
	PHY3401, General Physics I Lab #	1	
	Elective	3	
SPRING	AIC2140, APEX 2	1	14
	CHE2500, Organic Chemistry II	3	
	CHE2501, Organic Chemistry II Lab	1	
	CHE2200, Introduction to the Scientific Literature	1	
	PHY1600, General Physics II (includes PHY1602, Review) #	4	
	PHY1601, General Physics II Lab #	1	
	Gen Ed course (Civic/Soc Resp or Human Cult/Exp)***	3	
JUNIOR			
FALL	CHE2600, Analytical Chemistry with lab #	4	15
	CHE4200, Biochemistry I with lab### (CHE4201)	4	
	BIO1400, Biology I with lab (BIO1401)	4	
	MAT2004, Biostatistics (Gen Ed – Quant Lit)	3	
SPRING	AIC3140, APEX 3	1	15
	BIO3XXX, 3000-level Biology course w lab, selected with advisor	4	
	CHE4300, Biochemistry II with lab### (CHE4301)	4	
	Gen Ed course (Civic/Soc Resp or Human Cult/Exp)***	3	
	Gen Ed course (Civic/Soc Resp or Human Cult/Exp)***	3	
SENIOR			
FALL	AIC4140, APEX 4	1	15
	CHE3400, Physical Chemistry I###	3	
	CHE3401, Physical Chemistry I Lab###	1	
	CHE4840, Senior Seminar in Chemistry, with lab (CHE4841)	4	
	Gen Ed course (Civic/Soc Resp or Human Cult/Exp)***	3	
	Gen Ed course (Civic/Soc Resp or Human Cult/Exp)***	3	
SPRING	CHE3500, Physical Chemistry II###	3	17
	CHE3501, Physical Chemistry II Lab###	1	
	CHE3XXX, Chemistry elective with lab	4	
	Gen Ed course (Civic/Soc Resp or Human Cult/Exp)***	3	
	Elective or CHE4900, Chemistry Research	3	
	Elective	3	
		TOTAL CREDITS:	120

Notes:

*A student will incur additional tuition charges in any semester in excess of 17 credits.

**A student must apply to the Dean for permission to take more than 18 credits in any given semester.

*** General Education courses must be selected to satisfy the General Education requirements in Civic and Social Responsibility, Human Culture and Expression, and Scientific and Quantitative Literacy.

These courses may be swapped according to year in which CHE2600 offered (usually scheduled in "odd" fall semesters).

These courses may be swapped according to year in which CHE3400/3500 offered (usually scheduled in "odd" fall/"even" spring semesters).

List of Requirements (all courses are 3 credits unless otherwise noted)

Major Requirements

_____ CHE1600	General Chemistry I, with review CHE1602 and lab CHE1601 (4 cr)
_____ CHE1700	General Chemistry II, with review CHE1702 and lab CHE1701 (4 cr)
_____ CHE2200	Introduction to the Scientific Literature (1 cr)
_____ CHE2400	Organic Chemistry I, with lab CHE2401 (4 cr)
_____ CHE2500	Organic Chemistry II, with lab CHE2501 (4 cr)
_____ CHE2600	Analytical Chemistry, with lab CHE2601 (4 cr)
_____ CHE3400	Physical Chemistry I, with lab CHE3401 (4 cr)
_____ CHE3500	Physical Chemistry II, with lab CHE3501 (4 cr)
_____ CHE4200	Biochemistry I, with lab CHE4201 (4 cr)
_____ CHE4300	Biochemistry II, with lab CHE4301 (4 cr)
_____ CHE4840	Senior Seminar
_____ MAT2004	Biostatistics
_____ MAT2400	Calculus I
_____ MAT2500	Calculus II
_____ PHY1600	General Physics I, with review PHY1602 and lab PHY1601 (4 cr)
_____ PHY1800	General Physics II, with review CHE1802 and lab PHY1801 (4 cr)

_____ CREDITS

Additionally, any two of the following courses:

_____ BIO1400	Biology I with lab, BIO1401 (4 cr)
_____ BIO3450	Genetics with lab, BIO3451 (4 cr)
_____ BIO4030	Molecular Biology with lab, BIO4031 (4 cr)

_____ CREDITS

Plus four credit hours from the following, including one credit of laboratory:

_____ CHE3600	Advanced Inorganic Chemistry
_____ CHE3601	Advanced Inorganic Lab (1 cr)
_____ CHE3650	Spectroscopy of Organic Compounds
_____ CHE3651	Advanced Organic Lab Techniques (1 cr)
_____ CHE4050	Instrumental Analysis, with lab, CHE4051 (4 cr)

_____ CREDITS

Plus, the following General Education courses (each line represents one course from the list):

● **Personal and Professional Development (4 courses, 4 credits or 6 credits (ACE students) total)**

- _____ APEX 1: AIC1140 (1 cr) or AIC1100 Introduction to ACE (3 cr)
- _____ APEX 2: AIC2140 (1 cr)
- _____ APEX 3: AIC3140 (1 cr)
- _____ APEX 4: AIC4140 (1 cr)

● **Civic and Social Responsibility: (4 courses, 12 credits total, with at least 1 course in each area)**

- _____ **Individual and Interpersonal Behavior:** PSY1401, PSY1501, SOC1010, SOC1100, SOC1400
- _____ **American Heritage/Society:** AMS1100, ECO1000, ECO1401, ECO1402, HST1510, HST1520, HST1600, POL1000, POL1400
- _____ **Global Perspective:** ECO1010, HST1400, HST1410, HST1420, HST1430, HST1500, HST2440, IBS1420, POL1500
- _____ Any additional course from the 3 subcategories listed above

● **Human Culture and Expression: (5 courses, 15 credits total, with 2 courses in Composition and Communication And...**

- _____ **Composition and Communication:** ENG1201 OR ENG1601
- _____ **Composition and Communication:** ENG1202 OR ENG1602

... And 2 courses in 2 different areas, And...

- _____ **Language and Literature:** Any ENG2XXX-level or higher literature course OR any elementary or intermediate foreign language
- _____ **Visual and Fine Arts:** ART1000, ART1010, ART1030, ART1100, ART1120, COM2460, COM3290, MUSXXXX, THR1400, VDA2640
- _____ **Philosophy and Ethics:** PHI1000, PHI1200, PHI1400, PHI2010, PHI2030

...And 1 additional course from any of the 3 areas above

_____ Additional course from 3 subcategories listed above

● **Scientific Perspectives and Inquiry: (2 courses with labs, 8 credits total including 2 credits in Lab)**

- _____ BIO1020/1021, BIO1100/1101, BIO1110/1111, BIO1130/1131, * BIO1200/1201; * BIO1210/1211; *BIO1300/1301, *BIO1400/1401, *BIO1500/1501; CHE1100/1101, CHE1110/1111, CHE1200/1201, CHE1600/1601, CHE1700/1701; PHY1010/1011, PHY1020/1021, PHY1030/1031, PHY1050/1051, PHY1600/1601, PHY1800/1801
- _____ BIO1020/1021, BIO1100/1101, BIO1110/1111, BIO1130/1131, * BIO1200/1201; * BIO1210/1211; *BIO1300/1301, *BIO1400/1401, *BIO1500/1501; CHE1100/1101, CHE1110/1111, CHE1200/1201, CHE1600/1601, CHE1700/1701; PHY1010/1011, PHY1020/1021, PHY1030/1031, PHY1050/1051, PHY1600/1601, PHY1800/1801

**Restricted to students for which course is a major requirement*

● **Quantitative Literacy: (1 course, 3 credits total)**

- _____ MAT1310, 1430, 2004, 2030; PSY2302/CRJ2302

When counting credits, do not include those for courses included in the major requirements.

_____ CREDITS

Plus, enough elective courses to reach a minimum of 120 total credits.

- _____ Course: _____
- _____ Course: _____
- _____ Course: _____
- _____ Course: _____
- _____ Course: _____
- _____ Course: _____

_____ TOTAL CREDITS
(120 min req for graduation)