Sample Student Schedules

The schedules on the following pages are idealized. Each provides one example of how courses could be scheduled to enable completion of degree requirements within four years (eight semesters). There are certainly alternative schedules that could also achieve this goal. Although included in some of the sample schedules, credit loads above 16 hours per semester are not recommended. Students may want to consider taking winter or summer courses to lighten course loads and improve learning.

The sample schedule marked "highly prepared at admission" is designed for a student who enters Millersville University with a strong background in biology, chemistry and math that allows them to take Chem 111 and Math 161 or 160 during their first semester as a freshman. Schedules marked "less prepared at admission" are designed for students who will benefit by completing prerequisite courses before enrolling in these more advanced science classes.

If you have questions about course scheduling, please contact your academic advisor.

Bachelor of Science in Allied Health Technologies - Medical Technology Option SAMPLE PROGRAM (120 s.h. minimum)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	100	General Biology [§]	3	G 3		Social Sciences #1	3
CHEM	111†	Intro Chemistry I	4	сомм	100	Fundamentals of Speech	3
ENGL	110	English Composition	3	MATH	160*	Precalculus	4
G1		_ Humanities #1	3	CHEM	112†	Intro Chemistry II	4
BIOL	257 ^a	Intro to Allied Health	1	WELL	175	Wellness	3
		TOTAL S.H.	14			TOTAL S.H.	17
	THIRE) SEMESTER			FOUR	TH SEMESTER	
BIOL	362	Cell & Devel Biology, W	4	BIOL	255	Human Anat & Phys II	4
BIOL	254	Human Anat & Phys I	4	BIOL	364	Genetics & Molecular Bio	4
CHEM	235 ^a	Short Crse Organic Chem	4	G3		Social Sciences #2, W	3
G1		_ Humanities #2, W	3	G1		 Humanities #3, D	3
				MATH	130†	Elements of Statistics	3
		TOTAL S.H.	15			TOTAL S.H.	17
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	461	General Microbiology	3	BIOL	454 ^a	Immunology	2
BIOL		Directed Elective ^b #1	2-4	CHEM	326	Biochemistry I	4
ELEC		- General Elective**	3	G3		Social Sciences #3, W	3
Р		Perspective Course (P)	3	BIOL			2-4
PHYS	131	Physics I with Algebra	4	ENGL	312	(or alt.) Advanced Writing (AW)	3
		TOTAL S.H.	15-17			TOTAL S.H.	14-16

CLINICAL PROGRAM

TRANSFER CREDITS

26

^a BIOL 257 and CHEM 235 offered only in Fall Semester; BIOL 454 offered only in Spring Semester.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] Must earn a B- or higher as prerequesite for BIOL 362 and 364.

^{**}Credits required if needed to bring overall total to 120 s.h.

^b Minimum of two directed electives.

Bachelor of Science in Allied Health Technologies - Nuclear Medicine Technology Option SAMPLE PROGRAM (120 s.h. minimum)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	100	General Biology [§]	3	G3		Social Sciences #1	3
CHEM	111†	Intro Chemistry I	4	COMM	100	Fundamentals of Speech	3
ENGL	110	English Composition	3	MATH	160*	Precalculus	4
G1		_ Humanities #1	3	CHEM	112†	Intro Chemistry II	4
BIOL	257ª	Intro to Allied Health	1	WELL	175	Wellness	3
		TOTAL S.H.	14			TOTAL S.H.	17
					•	1	
	THIRD	SEMESTER			FOUR	TH SEMESTER	
BIOL	362	Cell & Devel Biology, W	4	BIOL	255	Human Anat & Phys II	4
BIOL	254	Human Anat & Phys I	4	CHEM	326	Biochemistry I	4
CHEM	235 ^a	Short Crse Organic Chem	4	G3		Social Sciences #2, W	3
G1		Humanities #2, W	3	G1		Humanities #3, D	3
				MATH	130†	Elements of Statistics	3
		TOTAL S.H.	15			TOTAL S.H.	. 17
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	461	General Microbiology	3	BIOL	454 ^a	Immunology	2
BIOL	364	Genetics & Molecular Bio	4	BIOL		Directed Elective ^b #1	2-4
ELEC		General Elective**	3	G3		Social Sciences #3, W	3
Р		Perspective Course (P)	3	BIOL		Dir Elec ^b #2 to ≥ 6 s.h. BIOL Elec	2-4
PHYS	131	Physics I with Algebra	4	ENGL	312	(or alt.) Advanced Writing (AW)	3
		TOTAL S.H.	17			TOTAL S.H.	14-16

CLINICAL PROGRAM

TRANSFER CREDITS

26

^a BIOL 257 and CHEM 235 offered only in Fall Semester; BIOL 454 offered only in Spring Semester.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] Must earn a B- or higher as prerequesite for BIOL 362 and 364.

^{**}Credits required if needed to bring overall total to 120 s.h.

^b Minimum of two directed electives.

Bachelor of Science in Allied Health Technologies - Sports Medicine/Pre-Athletic Training for Bloomsburg

	FALL 1	1			SPRIN	IG 1	
BIOL	100	General Biology⁵	3	CHEM	112†	Chemistry II	4
CHEM	111†	Chemistry I	4	COMM	100	Fundamentals of Speech	3
ENGL	110	English Composition	3	MATH	160*	Precalculus	4
WELL	175	Wellness	3	WSSD	311	First Aid	3
G3		Social Sciences #1	3	G1		Humanities #1	3
		(Psychology 100 recommended)				(Philosophy 100 recommended)	
		TOTAL S.H.	16			TOTAL S.H.	17
	SUMI	MER 1			FALL 2	•	
BIOL	254	Human Anat & Phys I	4	CHEM	235 ^a	Short Crse Organic Chem	4
BIOL	255	Human Anat & Phys II	4	BIOL	362	Cell & Devel Biology, W	4
DIGE	200	Trainati Titat & Titys II	-	PHYS	131†	Physics I	4
				WSSD	375	Prevent and Care	3
		TOTAL S.H.	8		0,0	TOTAL S.H.	15
	SPRN				WINT	ER/SUMMER 2	
G1		_ Humanities #2	3	D (W)		Diversity/Writing Course	3
BIOL	352	Nutritional Science (W)	3			(BIOL 207 recommended)	
WSSD	450	Kines & Phys	3				
G3		Social Sciences #2 (SOC 101/ANTH 121 recommended)	3				
G3		Social Sciences #3 (PSYC 227/228 recommended)	3				
		TOTAL S.H.	15			TOTAL S.H.	3
	АР	PLY TO MS PROGRAMS AT END	OF 2 ND OR	BEGINNIN	G OF 3	RD YEAR OF STUDY AT MU.	
	FALL 3	3			SPRIN	G 3	
ENGL	312	Advanced Writing (AW)	3	BIOL	364	Genetics & Molecular Bio	4
WSSD	452	Nutritional Performance	3	BIOL	375	Biometry	3
WSSD	591	Exercise Physiology	3	WSSD	582	Sports Psychology	3
BIOL	461	Microbiology	3	G1		Humanities #3	3
PSYC	356	Health Psychology	3	P		Perspectives Course (COMM 461 recommended)	3
		TOTAL S.H.	15			(-seem to 2 to 6 of 1 mended)	16

[§] Must earn a B- or higher as prerequesite for BIOL 362 and 364.

^aCHEM 235 offered only in Fall Semester

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

Bachelor of Science in Allied Health Technologies - Respiratory Therapy Option SAMPLE PROGRAM (120 s.h. minimum)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	100	General Biology	3	сомм	100	Fundamentals of Speech	3
CHEM	103†	Gen, Org & Biochem I	3	MATH	130*	Elements of Statistics	3
ENGL	110	English Composition	3	CHEM	104†	Gen, Org & Biochem II	3
G1		Humanities #1	3	G1		Humanities #2	3
G3		Social Sciences #1	3	WELL	175	Wellness	3
		TOTAL S.H.	15			TOTAL S.H.	15
	TIUDD	CTRAFCTED			roun	TIL CENAFOTED	
DIO!		SEMESTER	3	DIO!		TH SEMESTER	A
BIOL	461	General Microbiology	3	BIOL	255	Human Anat & Phys II	4
BIOL.	254	Human Anat & Phys I	4	G3		Social Sciences #3, W	3
PHYS	131†	Physics I with Algebra	4	ENGL	312	(or alt.) Advanced Writing (AW)	3
G1		_ Humanities #3, W	3	ELEC		General Elective**	3
G3		Social Sciences #2, D	3	ELEC		General Elective**	3
		TOTAL S.H.	17			TOTAL S.H.	16
	SUMN	∕/ER			FIFTH	SEMESTER	
RESP	410	Acute Cardiopulmonary Care	2	RESP	413	Resp Assessment & Therap	4
RESP	411	Resp Care Techniques I	2	RESP	421	Phys Mechanical Ventilation	2
RESP	412	Prin of Aerosol & Gas Ther	3	RESP	414	Resp Care Techniques II	3
RESP	422	Pharmacology	2	RESP	460	Clinical Practice I	2
RESP	420	Arterial Blood Gas Analysis	3	RESP	425	Neonatology	2
NESF	420	Arterial blood Gas Allalysis	3	RESP	419	Resp Care in Alt Sites	2
		TOTAL S.H.	12	KESF	419	TOTAL S.H.	15
	WINT	ER SESSION			SIXTH	SEMESTER	
RESP	461	Clinical Practicum I	1	BIOL	352	Nutritional Science	3
				RESP	417	Resp Care Techniques III, W	3
				RESP	415	Tech Aspects Mech Vent	. 3
				RESP	423	Infectious Diseases	2
				RESP	424	Non-Infectious Diseases	2
				RESP	462	Clinical Practice II	2
		TOTAL S.H.	1			TOTAL S.H.	15
						v=v=	
	SUMN		_			NTH SEMESTER	
RESP	463	Clinical Practicum II	2	RESP	464	Clinical Practicum III	10
				RESP	495	Resp Care Research	2
		TOTAL S.H.	2			TOTAL S.H.	12

Note: The perspectives course (P) is waived for BS ALHT Resp Th.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Allied Health Technologies - Sports Medicine Option SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	100	General Biology§	3	СНЕМ	112†	Chemistry II	4
CHEM	111†	Chemistry (4	сомм		Fundamentals of Speech	3
ENGL	110	English Composition	3	MATH	160*	Precalculus	4
WELL	175	Wellness	3	WSSD	311	First Aid	3
G3		Social Sciences #1	3	G1		Humanities #1	3
		(Psychology 100 recommended)				(Philosophy 100 recommended)	
		TOTAL S.H.	16			TOTAL S.H.	17
		SEMESTER			FOUR	TH SEMESTER	
BIOL	254	Human Anat & Phys I	4	BIOL	255	Human Anat & Phys II	4
BIOL	362	Cell & Devel Biology, W	4	BIOL	352	Nutritional Science, W	3
CHEM	235°	Short Crse Organic Chem	4	WSSD	450	Kines & Phys	3
WSSD	375	Prevent and Care	3	G3		Social Sciences #2	3
						(SOC 101/ANTH 121 recommended)	
				G3		Social Sciences #3	3
						(PSYC 227/228 recommended)	
		TOTAL S.H.	15			TOTAL S.H.	16
	FIFTH	SEMESTER			SIXTH	SEMESTER	
ENGL	312	Advanced Writing (AW)	3	BIOL	364	Genetics & Molecular Bio	4
WSSD	452	Nutritional Performance	3	WSSD	582	Sports Psychology	3
WSSD	591	Exercise Physiology	3	BIOL	375	Biometry	3
BIOL	461	Microbiology	3	G1		Humanities #2	3
PSYC	356	Health Psychology	3	Р		Perspectives Course (COMM 461 recommended)	3
		TOTAL S.H.	15			TOTAL S.H.	16
	SEVEN	TH SEMESTER			EIGHT	H SEMESTER	
G1		Humanities #3	3	CHEM	326	Biochemistry	4
PHYS	131	Physics I	4	PHYS	132	Physics II	4
D (W)		Diversity/Writing Course	3		492	Capstone Seminar	1
F1 F2		(BIOL 207 recommended)		ELEC		BIOL/WSSD Elective	2-4
ELEC		BIOL/WSSD Elective	2-4			_	
		TOTAL S.H.	12-14			TOTAL S.H.	11-13

[§] Must earn a B- or higher as prerequesite for BIOL 362 and 364.

^aCHEM 235 offered only in Fall Semester

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

Bachelor of Science in Allied Health Technologies - Sports Medicine Option SAMPLE PROGRAM (120 s.h. minimum) (Less Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	100	General Biology [§]	3	CHEM	111†	Chemistry I	4
CHEM	110	Fundamentals of Chem	3	ENGL	110	English Composition	3
MATH	101	College Algebra	3	MATH	160*	Precalculus	4
WELL	175	Wellness	3	WSSD	311	First Aid	3
COMM	100	Fundamentals of Speech	3	G3		Social Sciences #1	3
			 			(Psychology 100 recommended)	
		TOTAL S.H.	15			TOTAL S.H.	17
	THIRE) SEMESTER			FOUR	TH SEMESTER	
BIOL	254	Human Anat & Phys I	4	BIOL	255	Human Anat & Phys II	4
BIOL	362	Cell & Devel Biology, W	4	BIOL	352	Nutritional Science, W	3
CHEM	112†	- · · ·	4	WSSD	450	Kines & Phys	3
WSSD	375	Prevent and Care	3	G3		Social Sciences #2	3
						(SOC 101/ANTH 121 recommended)	
				G1		Humanities #1	3
		TOTAL S.H.	15			TOTAL S.H.	16
	FIFTH	SEMESTER			SIXTH	SEMESTER	
СНЕМ	FIFTH 235 ^a	SEMESTER Short Crse Organic Chem	4	BIOL	SIXTH 364	SEMESTER Genetics & Molecular Bio	4
CHEM WSSD			4 3	BIOL BIOL			4
	235 ^a	Short Crse Organic Chem			364	Genetics & Molecular Bio	
WSSD	235 ^a 452	Short Crse Organic Chem Nutritional Performance	3	BIOL	364	Genetics & Molecular Bio Biometry	3
WSSD WSSD	235 ^a 452 591	Short Crse Organic Chem Nutritional Performance Exercise Physiology	3 3	BIOL	364	Genetics & Molecular Bio Biometry Social Sciences #3	3
WSSD WSSD BIOL	235 ^a 452 591	Short Crse Organic Chem Nutritional Performance Exercise Physiology Microbiology	3 3 3	BIOL G3	364	Genetics & Molecular Bio Biometry Social Sciences #3 (PSYC 227 or 228 recommended)	3 3
WSSD WSSD BIOL	235 ^a 452 591	Short Crse Organic Chem Nutritional Performance Exercise Physiology Microbiology Humanities #2	3 3 3	BIOL G3 G1	364	Genetics & Molecular Bio Biometry Social Sciences #3 (PSYC 227 or 228 recommended) Humanities #3	3 3 3
WSSD WSSD BIOL	235 ^a 452 591	Short Crse Organic Chem Nutritional Performance Exercise Physiology Microbiology Humanities #2	3 3 3	BIOL G3 G1	364	Genetics & Molecular Bio Biometry Social Sciences #3 (PSYC 227 or 228 recommended) Humanities #3 Perspectives Course	3 3 3
WSSD WSSD BIOL	235 ^a 452 591 461	Short Crse Organic Chem Nutritional Performance Exercise Physiology Microbiology Humanities #2 (Philosophy 100 recommended)	3 3 3 3	BIOL G3 G1	364 375	Genetics & Molecular Bio Biometry Social Sciences #3 (PSYC 227 or 228 recommended) Humanities #3 Perspectives Course (COMM 461 recommended) TOTAL S.H.	3 3 3 3
WSSD WSSD BIOL G1	235 ^a 452 591 461	Short Crse Organic Chem Nutritional Performance Exercise Physiology Microbiology Humanities #2 (Philosophy 100 recommended) TOTAL S.H.	3 3 3 3	BIOL G3 G1 P	364 375	Genetics & Molecular Bio Biometry Social Sciences #3 (PSYC 227 or 228 recommended) Humanities #3 Perspectives Course (COMM 461 recommended) TOTAL S.H.	3 3 3 3
WSSD BIOL G1	235 ^a 452 591 461 SEVER 312	Short Crse Organic Chem Nutritional Performance Exercise Physiology Microbiology Humanities #2 (Philosophy 100 recommended) TOTAL S.H. NTH SEMESTER Advanced Writing (AW)	3 3 3 3	BIOL G3 G1 P	364 375 ———————————————————————————————————	Genetics & Molecular Bio Biometry Social Sciences #3 (PSYC 227 or 228 recommended) Humanities #3 Perspectives Course (COMM 461 recommended) TOTAL S.H.	3 3 3 3
WSSD BIOL G1 ENGL PHYS	235 ^a 452 591 461	Short Crse Organic Chem Nutritional Performance Exercise Physiology Microbiology Humanities #2 (Philosophy 100 recommended) TOTAL S.H. NTH SEMESTER Advanced Writing (AW) Physics I	3 3 3 3 16	BIOL G3 G1 P CHEM PHYS	364 375 ———————————————————————————————————	Genetics & Molecular Bio Biometry Social Sciences #3 (PSYC 227 or 228 recommended) Humanities #3 Perspectives Course (COMM 461 recommended) TOTAL S.H. TH SEMESTER Biochemistry Physics II	3 3 3 3 16
WSSD BIOL G1	235 ^a 452 591 461 SEVER 312	Short Crse Organic Chem Nutritional Performance Exercise Physiology Microbiology Humanities #2 (Philosophy 100 recommended) TOTAL S.H. NTH SEMESTER Advanced Writing (AW) Physics I Diversity/Writing Course	3 3 3 3	BIOL G3 G1 P CHEM PHYS WSSD	364 375 EIGHT 326 132 582	Genetics & Molecular Bio Biometry Social Sciences #3 (PSYC 227 or 228 recommended) Humanities #3 Perspectives Course (COMM 461 recommended) TOTAL S.H. TH SEMESTER Biochemistry Physics II Sports Psychology	3 3 3 3 16
WSSD BIOL G1 ENGL PHYS D (W)	235 ^a 452 591 461 SEVEI 312 131 [†]	Short Crse Organic Chem Nutritional Performance Exercise Physiology Microbiology Humanities #2 (Philosophy 100 recommended) TOTAL S.H. NTH SEMESTER Advanced Writing (AW) Physics I Diversity/Writing Course (BIOL 207 recommended)	3 3 3 3 16	G1 P CHEM PHYS WSSD WSSD	364 375 ———————————————————————————————————	Genetics & Molecular Bio Biometry Social Sciences #3 (PSYC 227 or 228 recommended) Humanities #3 Perspectives Course (COMM 461 recommended) TOTAL S.H. TH SEMESTER Biochemistry Physics II Sports Psychology Capstone Seminar	3 3 3 3 16
WSSD WSSD BIOL G1 ENGL PHYS D (W)	235 ^a 452 591 461 SEVER 312	Short Crse Organic Chem Nutritional Performance Exercise Physiology Microbiology Humanities #2 (Philosophy 100 recommended) TOTAL S.H. NTH SEMESTER Advanced Writing (AW) Physics I Diversity/Writing Course (BIOL 207 recommended) Health Psychology	3 3 3 3 4 3	BIOL G3 G1 P CHEM PHYS WSSD	364 375 EIGHT 326 132 582	Genetics & Molecular Bio Biometry Social Sciences #3 (PSYC 227 or 228 recommended) Humanities #3 Perspectives Course (COMM 461 recommended) TOTAL S.H. TH SEMESTER Biochemistry Physics II Sports Psychology	3 3 3 3 16
WSSD BIOL G1 ENGL PHYS D (W)	235 ^a 452 591 461 SEVEI 312 131 [†]	Short Crse Organic Chem Nutritional Performance Exercise Physiology Microbiology Humanities #2 (Philosophy 100 recommended) TOTAL S.H. NTH SEMESTER Advanced Writing (AW) Physics I Diversity/Writing Course (BIOL 207 recommended)	3 3 3 3 16	G1 P CHEM PHYS WSSD WSSD	364 375 EIGHT 326 132 582	Genetics & Molecular Bio Biometry Social Sciences #3 (PSYC 227 or 228 recommended) Humanities #3 Perspectives Course (COMM 461 recommended) TOTAL S.H. TH SEMESTER Biochemistry Physics II Sports Psychology Capstone Seminar	3 3 3 3 16

 $[\]$ Must earn a B- or higher as prerequesite for BIOL 362 and 364.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

^aCHEM 235 offered only in Fall Semester

Bachelor of Arts in Biology SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
CHEM	111†	Intro Chemistry I	4	or	221	Concepts of Botany	
MATH	160*	Precalculus or Calculus 1	4-5	CHEM	112†	Intro Chemistry II	4
	or 161(:	163)		MATH	161†	Calculus I or	3-4
COMM	100	Fundamentals of Speech	3	or o	ther	(II, Stats or CSCI)	
				ENGL	110	English Composition	3
		TOTAL S.H.	15-16			TOTAL S.H.	14-15
	THIRE) SEMESTER			EOI ID	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	362	Cell & Devel Biology, W	4
or	211	Concepts of Zoology	•	CHEM	302	Chemistry, ≥200 level	4
CHEM		Chemistry, ≥200 level	4	G3		Social Sciences #1	3
G1		Humanities(G1) (Non-FORL)	3	FORL	102 [§]	Foreign Language (G1)	3
FORL	101 [§]	Foreign Language (G1)	3	WELL	175	Wellness Course	3
		TOTAL S.H.	14	77.22		TOTAL S.H.	17
							17
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	FIFTH 364	SEMESTER Genetics & Molecular Bio	4	BIOL	SIXTH 343	SEMESTER Ecology & Evolution	4
BIOL or			4	BIOL or			4
	364	Genetics & Molecular Bio	4		343	Ecology & Evolution Genetics & Molecular Bio	4
or	364 343	Genetics & Molecular Bio Ecology & Evolution		or	343 364	Ecology & Evolution Genetics & Molecular Bio Physics II with Algebra	4
or PHYS	364 343 131	Genetics & Molecular Bio Ecology & Evolution Physics I with Algebra	4	or PHYS	343 364 132	Ecology & Evolution Genetics & Molecular Bio Physics II with Algebra Foreign Language (G1)	4
or PHYS FORL	364 343 131	Genetics & Molecular Bio Ecology & Evolution Physics I with Algebra Foreign Language (G1)	4 3	or PHYS FORL	343 364 132	Ecology & Evolution Genetics & Molecular Bio Physics II with Algebra	4
or PHYS FORL	364 343 131	Genetics & Molecular Bio Ecology & Evolution Physics I with Algebra Foreign Language (G1) Social Sciences #2, W	4 3 3	or PHYS FORL	343 364 132	Ecology & Evolution Genetics & Molecular Bio Physics II with Algebra Foreign Language (G1) Perspectives Course (P)	4 3 3
or PHYS FORL G3	364 343 131 201 [§]	Genetics & Molecular Bio Ecology & Evolution Physics I with Algebra Foreign Language (G1) Social Sciences #2, W TOTAL S.H.	4 3 3	or PHYS FORL	343 364 132 202 [§]	Ecology & Evolution Genetics & Molecular Bio Physics II with Algebra Foreign Language (G1) Perspectives Course (P)	4 3 3
or PHYS FORL G3 BIOL	364 343 131 201 [§]	Genetics & Molecular Bio Ecology & Evolution Physics I with Algebra Foreign Language (G1) Social Sciences #2, W TOTAL S.H. ITH SEMESTER Biology Elective #1	4 3 3	or PHYS FORL	343 364 132 202 [§]	Ecology & Evolution Genetics & Molecular Bio Physics II with Algebra Foreign Language (G1) Perspectives Course (P) TOTAL S.H.	4 3 3
or PHYS FORL G3 BIOL ESCI	364 343 131 201 [§]	Genetics & Molecular Bio Ecology & Evolution Physics I with Algebra Foreign Language (G1) Social Sciences #2, W TOTAL S.H.	4 3 ———————————————————————————————————	or PHYS FORL P	343 364 132 202 [§]	Ecology & Evolution Genetics & Molecular Bio Physics II with Algebra Foreign Language (G1) Perspectives Course (P) TOTAL S.H. H SEMESTER	4 3 3 14
or PHYS FORL G3 BIOL	364 343 131 201 [§]	Genetics & Molecular Bio Ecology & Evolution Physics I with Algebra Foreign Language (G1) Social Sciences #2, W TOTAL S.H. #TH SEMESTER Biology Elective #1 Earth Science, ≥200 level Social Sciences #3, W	4 3 3 14	or PHYS FORL P	343 364 132 202 [§]	Ecology & Evolution Genetics & Molecular Bio Physics II with Algebra Foreign Language (G1) Perspectives Course (P) TOTAL S.H. H SEMESTER Biology Elective #2	4 3 3 14
or PHYS FORL G3 BIOL ESCI G3 D	364 343 131 201 [§]	Genetics & Molecular Bio Ecology & Evolution Physics I with Algebra Foreign Language (G1) Social Sciences #2, W TOTAL S.H. ATH SEMESTER Biology Elective #1 Earth Science, ≥200 level Social Sciences #3, W Diversity Course (D)	4 3 3 14	or PHYS FORL P BIOL BIOL	343 364 132 202 [§] EIGHT	Ecology & Evolution Genetics & Molecular Bio Physics II with Algebra Foreign Language (G1) Perspectives Course (P) TOTAL S.H. H SEMESTER Biology Elective #2 or 472 Seminar in Biology	3 3 14 1-2
or PHYS FORL G3 BIOL ESCI G3	364 343 131 201 [§]	Genetics & Molecular Bio Ecology & Evolution Physics I with Algebra Foreign Language (G1) Social Sciences #2, W TOTAL S.H. #TH SEMESTER Biology Elective #1 Earth Science, ≥200 level Social Sciences #3, W	3-4 3-4 3-4 3	or PHYS FORL P BIOL BIOL BIOL	343 364 132 202 [§] EIGHT 470 Elec [§]	Ecology & Evolution Genetics & Molecular Bio Physics II with Algebra Foreign Language (G1) Perspectives Course (P) TOTAL S.H. H SEMESTER Biology Elective #2 or 472 Seminar in Biology for total of 33 BIOL s.h.	3 3 14 1-2 0-2
or PHYS FORL G3 BIOL ESCI G3 D	364 343 131 201 [§]	Genetics & Molecular Bio Ecology & Evolution Physics I with Algebra Foreign Language (G1) Social Sciences #2, W TOTAL S.H. ATH SEMESTER Biology Elective #1 Earth Science, ≥200 level Social Sciences #3, W Diversity Course (D)	3-4 3-4 3-4 3-3	or PHYS FORL P BIOL BIOL BIOL ENGL	343 364 132 202 [§] EIGHT 470 Elec [§]	Ecology & Evolution Genetics & Molecular Bio Physics II with Algebra Foreign Language (G1) Perspectives Course (P) TOTAL S.H. H SEMESTER Biology Elective #2 or 472 Seminar in Biology for total of 33 BIOL s.h. or alt Advd Writing (AW)	3-4 1-2 0-2 3

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] The General Education requirement for 2 additional Humanities Courses (G1) is met by taking beginning or intermediate FORL courses.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Arts in Biology SAMPLE PROGRAM (120 s.h. minimum) (Less Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
MATH	101	College Algebra	3	or	221	Concepts of Botany	
ENGL	110	English Composition	3	CHEM	111†	Intro Chemistry I	4
G1		Humanities #1	3	MATH	110*	Trigonometry/	4-6
WELL	175	Wellness	3	or 1	160	Precalculus	
				COMM	100	Fundamentals of Speech	3
		TOTAL S.H.	16			TOTAL S.H.	15-17
	THIRE	O SEMESTER			FOUR	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	362	Cell & Devel Biology, W	4
or	211	Concepts of Zoology		ESCI		_ Earth Science, ≥200 level	3-4
CHEM	112†	Intro Chemistry II	4	G3		Social Sciences #1	3
MATH	161†	Calculus I	4	G1		_Humanities(G1) (Non-FORL)	3
FORL	101 [§]	Foreign Language (G1)	3	FORL	102 [§]	Foreign Language (G1)	3
÷		TOTAL S.H.	15			TOTAL S.H.	16-17
BIOL or CHEM	FIFTH 364 343	SEMESTER Genetics & Molecular Bio Ecology & Evolution Chemistry, >200 level	4	BIOL	SIXTH 343 364	SEMESTER Ecology & Evolution Genetics & Molecular Bio	4
or CHEM	364 343	Genetics & Molecular Bio Ecology & Evolution _Chemistry, ≥200 level	4	or CHEM	343 364	Ecology & Evolution Genetics & Molecular Bio Chemistry, ≥200 level	4
or CHEM FORL	364	Genetics & Molecular Bio Ecology & Evolution Chemistry, ≥200 level Foreign Language (G1)	4 3	or CHEM FORL	343	Ecology & Evolution Genetics & Molecular Bio Chemistry, ≥200 level Foreign Language (G1)	4
or CHEM	364 343	Genetics & Molecular Bio Ecology & Evolution Chemistry, ≥200 level Foreign Language (G1) Social Sciences #2, W	4 3 <u>3</u>	or CHEM	343 364	Ecology & Evolution Genetics & Molecular Bio Chemistry, ≥200 level Foreign Language (G1) Social Sciences #3, W	4 3 <u>3</u>
or CHEM FORL	364 343	Genetics & Molecular Bio Ecology & Evolution Chemistry, ≥200 level Foreign Language (G1)	4 3	or CHEM FORL	343 364	Ecology & Evolution Genetics & Molecular Bio Chemistry, ≥200 level Foreign Language (G1)	4
or CHEM FORL	364 343 201 [§]	Genetics & Molecular Bio Ecology & Evolution Chemistry, ≥200 level Foreign Language (G1) Social Sciences #2, W	4 3 <u>3</u>	or CHEM FORL	343 364 202 [§]	Ecology & Evolution Genetics & Molecular Bio Chemistry, ≥200 level Foreign Language (G1) Social Sciences #3, W	4 3 <u>3</u>
or CHEM FORL G3	364 343 201 [§] SEVEN	Genetics & Molecular Bio Ecology & Evolution Chemistry, ≥200 level Foreign Language (G1) Social Sciences #2, W TOTAL S.H.	4 3 <u>3</u>	or CHEM FORL	343 364 202 [§]	Ecology & Evolution Genetics & Molecular Bio Chemistry, ≥200 level Foreign Language (G1) Social Sciences #3, W TOTAL S.H. H SEMESTER Biology Elective #2	4 3 <u>3</u>
or CHEM FORL G3	364 343 201 [§]	Genetics & Molecular Bio Ecology & Evolution Chemistry, ≥200 level Foreign Language (G1) Social Sciences #2, W TOTAL S.H.	4 3 3 —————————————————————————————————	or CHEM FORL G3	343 364 202 [§]	Ecology & Evolution Genetics & Molecular Bio Chemistry, ≥200 level Foreign Language (G1) Social Sciences #3, W TOTAL S.H.	4 3 3 14
or CHEM FORL G3	364 343 201 [§] SEVEN	Genetics & Molecular Bio Ecology & Evolution Chemistry, ≥200 level Foreign Language (G1) Social Sciences #2, W TOTAL S.H. NTH SEMESTER Biology Elective #1	4 3 3 14	or CHEM FORL G3 BIOL	343 364 202 [§]	Ecology & Evolution Genetics & Molecular Bio Chemistry, ≥200 level Foreign Language (G1) Social Sciences #3, W TOTAL S.H. H SEMESTER Biology Elective #2	4 3 3 14
or CHEM FORL G3 BIOL PHYS P	364 343 201 [§] SEVEN	Genetics & Molecular Bio Ecology & Evolution Chemistry, ≥200 level Foreign Language (G1) Social Sciences #2, W TOTAL S.H. NTH SEMESTER Biology Elective #1 Physics I with Algebra Perspectives Course (P) Diversity Course (D)	4 3 3 14	or CHEM FORL G3 BIOL BIOL	343 364 202 [§] EIGHT	Ecology & Evolution Genetics & Molecular Bio Chemistry, ≥200 level Foreign Language (G1) Social Sciences #3, W TOTAL S.H. H SEMESTER Biology Elective #2 or 472 Seminar in Biology	4 3 3 14
or CHEM FORL G3 BIOL PHYS P	364 343 201 [§] SEVEN	Genetics & Molecular Bio Ecology & Evolution Chemistry, ≥200 level Foreign Language (G1) Social Sciences #2, W TOTAL S.H. NTH SEMESTER Biology Elective #1 Physics with Algebra Perspectives Course (P)	4 3 3 14	or CHEM FORL G3 BIOL BIOL BIOL	343 364 202 [§] EIGHT 470 Elec [§]	Ecology & Evolution Genetics & Molecular Bio Chemistry, ≥200 level Foreign Language (G1) Social Sciences #3, W TOTAL S.H. H SEMESTER Biology Elective #2 or 472 Seminar in Biology for total of 33 BIOL s.h. or alt Advd Writing (AW) Physics II with Algebra	3-4 1-2 0-2
or CHEM FORL G3 BIOL PHYS P	364 343 201 [§] SEVEN	Genetics & Molecular Bio Ecology & Evolution Chemistry, ≥200 level Foreign Language (G1) Social Sciences #2, W TOTAL S.H. NTH SEMESTER Biology Elective #1 Physics I with Algebra Perspectives Course (P) Diversity Course (D)	4 3 3 14	OT CHEM FORL G3 BIOL BIOL BIOL ENGL	343 364 202 [§] EIGHT 470 Elec [§] 312	Ecology & Evolution Genetics & Molecular Bio Chemistry, ≥200 level Foreign Language (G1) Social Sciences #3, W TOTAL S.H. H SEMESTER Biology Elective #2 or 472 Seminar in Biology for total of 33 BIOL s.h. or alt Advd Writing (AW)	3-4 1-2 0-2 3

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] The General Education requirement for 2 additional Humanities Courses (G1) is met by taking beginning or intermediate FORL courses.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
CHEM	111†	Intro Chemistry I	4	or	221	Concepts of Botany	
MATH	160*	Precalculus or Calculus 1	4-5	CHEM	112†	Intro Chemistry II	4
	or 161 (1	163)		MATH	161†	Calculus I or	3-4
сомм	100	Fundamentals of Speech	3	oro	ther	(II, Stats or CSCI)	
				ENGL	110	English Composition	3
		TOTAL S.H.	15-16			TOTAL S.H.	14-15
	THIRE) SEMESTER			FOUR	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	362	Cell & Devel Biology, W	4
or	211	Concepts of Zoology	•	CHEM	232	Organic Chem II	4
CHEM	231	Organic Chem I	4	PHYS	132	Physics II with Algebra	4
PHYS	131	Physics I with Algebra	4	G1		Humanities #1	3
WELL	175	Wellness	3			_	
******	1,3	TOTAL S.H.	15			TOTAL S.H.	15
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	364	Genetics & Molecular Bio	4	BIOL	343	Ecology & Evolution	4
or	343	Ecology & Evolution		or	364	Genetics & Molecular Bio	
CHEM	326	Biochemistry I	4	BIOL		Biology Elective [§] #1	3
D	020	Diversity Course (D)	3	BIOL		Biology Elective§ #2, W	3
G3		Social Sciences #1, W	3	G1		Humanities #2	3
				G3		Social Sciences #2	3
		TOTAL S.H.	14			TOTAL S.H.	16
	SEVE	NTH SEMESTER			EIGHT	TH SEMESTER	
BIOL		or 470 Seminar in Biology	1-2	BIOL	L , Q 111	Biology Elective [§] #5	3
	4/ <i>L</i>				Elec§	#6 for total of 43 BIOL s.h.	
BIOL		Biology Elective [§] #3	3-4	BIOL	Elec		0-3
BIOL	240	_ Biology Elective [§] #4	3	G3		_Social Sciences #3	3
ENGL	312	or alt Advd Writing (AW)	3	P ELEC		Perspectives Course (P) General Elective**	3 3
G1		Humanities #3	3	F1 F1		General Flective**	
	<u> </u>	- Hamanico no	J				
		TOTAL S.H.	13-15	ELEC		General Elective** TOTAL S.H.	0-3 14-18

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] At least 12 s.h. of electives must be 300-level or above.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology SAMPLE PROGRAM (120 s.h. minimum) (Less Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
MATH	101	College Algebra	3	or	221	Concepts of Botany	
ENGL	110	English Composition	3	CHEM	111†	Intro Chemistry I	4
G1		Humanities #1	3	MATH	110*	Trigonometry/	4-6
WELL	175	Wellness	3	or 1	L60	Precalculus	
				COMM	100	Fundamentals of Speech	3
		TOTAL S.H.	16			TOTAL S.H.	15-17
	THIRD) SEMESTER			FOUR	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	362	Cell & Devel Biology, W	4
or	211	Concepts of Zoology	•	CHEM	231	Organic Chemistry I	4
CHEM	112†	Intro Chemistry II	4	G3	,	Social Sciences #1	3
MATH	161†	Calculus I	4	G1		- Humanities #3	3
G1		Humanities #2	3				
		TOTAL S.H.	15			TOTAL S.H.	14
				•			
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	FIFTH 364	SEMESTER Genetics & Molecular Bio	4	BIOL	SIXTH 343	SEMESTER Ecology & Evolution	4
BIOL or			4	BIOL or			4
	364	Genetics & Molecular Bio	4		343	Ecology & Evolution	4
or	364 343	Genetics & Molecular Bio Ecology & Evolution		or	343	Ecology & Evolution Genetics & Molecular Bio	
or CHEM	364 343	Genetics & Molecular Bio Ecology & Evolution Organic Chem II	4	or BIOL	343 364	Ecology & Evolution Genetics & Molecular Bio Biology Elective [§] #3, W	3 4 3
or CHEM BIOL	364 343	Genetics & Molecular Bio Ecology & Evolution Organic Chem II Biology Elective [§] #1	4 3	or BIOL CHEM	343 364	Ecology & Evolution Genetics & Molecular Bio Biology Elective [§] #3, W Biochemistry I	3
or CHEM BIOL	364 343	Genetics & Molecular Bio Ecology & Evolution Organic Chem II Biology Elective [§] #1 Biology Elective [§] #2	4 3 <u>3-4</u>	or BIOL CHEM	343 364	Ecology & Evolution Genetics & Molecular Bio Biology Elective [§] #3, W Biochemistry I Social Sciences #2, D	3 4 3
or CHEM BIOL	364 343 232	Genetics & Molecular Bio Ecology & Evolution Organic Chem II Biology Elective [§] #1 Biology Elective [§] #2	4 3 <u>3-4</u>	or BIOL CHEM	343 364 326	Ecology & Evolution Genetics & Molecular Bio Biology Elective [§] #3, W Biochemistry I Social Sciences #2, D	3 4 3
or CHEM BIOL	364 343 232	Genetics & Molecular Bio Ecology & Evolution Organic Chem II Biology Elective [§] #1 Biology Elective [§] #2 TOTAL S.H.	4 3 <u>3-4</u>	or BIOL CHEM	343 364 326	Ecology & Evolution Genetics & Molecular Bio Biology Elective [§] #3, W Biochemistry I Social Sciences #2, D TOTAL S.H.	3 4 3
or CHEM BIOL BIOL	364 343 232 SEVEN	Genetics & Molecular Bio Ecology & Evolution Organic Chem II Biology Elective [§] #1 Biology Elective [§] #2 TOTAL S.H.	4 3 3-4 14-15	or BIOL CHEM G3	343 364 326 EIGHT 132	Ecology & Evolution Genetics & Molecular Bio Biology Elective [§] #3, W Biochemistry I Social Sciences #2, D TOTAL S.H.	3 4 3 14
or CHEM BIOL BIOL	364 343 232 SEVEN	Genetics & Molecular Bio Ecology & Evolution Organic Chem II Biology Elective [§] #1 Biology Elective [§] #2 TOTAL S.H.	4 3 3-4 14-15	or BIOL CHEM G3	343 364 326 EIGHT 132	Ecology & Evolution Genetics & Molecular Bio Biology Elective [§] #3, W Biochemistry I Social Sciences #2, D TOTAL S.H. TH SEMESTER Physics II with Algebra	3 4 3 14
or CHEM BIOL BIOL PHYS BIOL	364 343 232 SEVEN	Genetics & Molecular Bio Ecology & Evolution Organic Chem II Biology Elective [§] #1 Biology Elective [§] #2 TOTAL S.H. NTH SEMESTER Physics I with Algebra Biology Elective [§] #4	4 3 3-4 14-15 4 3-4	or BIOL CHEM G3 PHYS BIOL	343 364 326 EIGHT 132 472	Ecology & Evolution Genetics & Molecular Bio Biology Elective [§] #3, W Biochemistry I Social Sciences #2, D TOTAL S.H. TH SEMESTER Physics II with Algebra or 470 Seminar in Biology #6 for total of 43 BIOL s.h. Social Sciences #3, W	3 4 3 14
Or CHEM BIOL BIOL PHYS BIOL BIOL	364 343 232 SEVEN 131	Genetics & Molecular Bio Ecology & Evolution Organic Chem II Biology Elective [§] #1 Biology Elective [§] #2 TOTAL S.H. NTH SEMESTER Physics I with Algebra Biology Elective [§] #4 Biology Elective [§] #5	4 3 3-4 14-15 4 3-4 3	or BIOL CHEM G3 PHYS BIOL BIOL G3 ELEC	343 364 326 EIGHT 132 472	Ecology & Evolution Genetics & Molecular Bio Biology Elective #3, W Biochemistry I Social Sciences #2, D TOTAL S.H. TH SEMESTER Physics II with Algebra or 470 Seminar in Biology #6 for total of 43 BIOL s.h. Social Sciences #3, W General Elective**	3 4 3 14 4 1-2 0-3 3
OT CHEM BIOL BIOL PHYS BIOL BIOL ENGL	364 343 232 SEVEN 131	Genetics & Molecular Bio Ecology & Evolution Organic Chem II Biology Elective [§] #1 Biology Elective [§] #2 TOTAL S.H. NTH SEMESTER Physics I with Algebra Biology Elective [§] #4 Biology Elective [§] #5 or alt Advd Writing (AW)	4 3 3-4 14-15 4 3-4 3 3	or BIOL CHEM G3 PHYS BIOL BIOL G3	343 364 326 EIGHT 132 472	Ecology & Evolution Genetics & Molecular Bio Biology Elective [§] #3, W Biochemistry I Social Sciences #2, D TOTAL S.H. TH SEMESTER Physics II with Algebra or 470 Seminar in Biology #6 for total of 43 BIOL s.h. Social Sciences #3, W	3 4 3 14 4 1-2 0-3

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] At least 12 s.h. of electives must be 300-level or above.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor's Degree: BSE SAMPLE PROGRAM (126 s.h. minimum) (Well-Prepared at Admission)

NOTE: Education students must fill out state and federal forms (Criminal Clearance Acts 34 & 151) EACH year.

NOTE: The student must take the PRAXIS test (required by the PDE) at least a semester before student teaching.

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
CHEM	111†	Intro Chemistry I	4	or	221	Concepts of Botany	
MATH	160*	Precalculus or Calculus 1	4-5	CHEM	112†	Intro Chemistry II	4
	or 161(163)		ENGL		Literature Course, G1 #1	3
ENGL	110	English Composition	3	G3		Social Sciences #1, W	3
PPST ^a		Pre-Professional Skills Test		COMM	100	Fundamentals of Speech	3
		TOTAL S.H.	15-16			TOTAL S.H.	17
	THIRD) SEMESTER			FOUR'	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	362	Cell & Devel Biology, W	4
or	211	Concepts of Zoology		CHEM	326	Biochemistry	4
CHEM	235 ^b	Short Crse Organic Chem	4	ESCI		Earth Science, ≥ 200 level	3-4
EDFN	211	Fdns of Modern Ed	3	G3	· · · · · · · · · · · · · · · · · · ·	Social Sciences #2	3
EDFN	241	Psyc Fdns Teaching	3			_	
WELL	175	Wellness	3				
		TOTAL S.H.	17			TOTAL S.H.	14-15
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	364	Genetics & Molecular Bio	4	BIOL	343	Ecology & Evolution	4
	275	Biometry	3	PHYS	132	Physics with Algebra	4
BIOL	375	Diotrically					
BIOL PHYS	3/5 131	Physics with Algebra	4	G3		Social Sciences #3, D	3
		•	4 3-4	G3 G1	····	Social Sciences #3, D Humanities #3	3 3
PHYS		Physics with Algebra	-		312	· ·	
PHYS BIOL		Physics with Algebra Biology Elective #1	3-4 0-1 3	G1	312	Humanities #3	3
PHYS BIOL BIOL		Physics with Algebra Biology Elective #1 Elect #2, total 32 BIOL s.h.	3-4 0-1	G1	312	Humanities #3	3
PHYS BIOL BIOL	131	Physics with Algebra Biology Elective #1 Elect #2, total 32 BIOL s.h. Humanities #2, W	3-4 0-1 3 18 ⁵	G1		Humanities #3 or alt Advd Writing (AW)	3 3
PHYS BIOL BIOL	131	Physics with Algebra Biology Elective #1 Elect #2, total 32 BIOL s.h. Humanities #2, W TOTAL S.H.	3-4 0-1 3 18 ⁵	G1		Humanities #3 or alt Advd Writing (AW) TOTAL S.H.	3
PHYS BIOL BIOL G1	131 	Physics with Algebra Biology Elective #1 Elect #2, total 32 BIOL s.h. Humanities #2, W TOTAL S.H.	3-4 0-1 3 18 ⁵	G1 ENGL	EIGHT	Humanities #3 or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER	3 3 ——————————————————————————————————
PHYS BIOL BIOL G1	131 SEVER 473 ^b 321	Physics with Algebra Biology Elective #1 Elect #2, total 32 BIOL s.h. Humanities #2, W TOTAL S.H. NTH SEMESTER (Last chance to Methods Teach Biology	3-4 0-1 3 18 ⁵ take PRAXIS)	G1 ENGL	EIGHT 461	Humanities #3 or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Student Teaching	3 3 ——————————————————————————————————
PHYS BIOL BIOL G1 BIOL EDFN 001	SEVER 473 ^b 321 330	Physics with Algebra Biology Elective #1 Elect #2, total 32 BIOL s.h. Humanities #2, W TOTAL S.H. WITH SEMESTER (Last chance to Methods Teach Biology EDFN:Issues in Teaching Sec Ed	3-4 0-1 3 18 ⁵ take PRAXIS)	G1 ENGL	EIGHT 461	Humanities #3 or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Student Teaching	3 3 ——————————————————————————————————
PHYS BIOL BIOL G1 BIOL EDFN 001 EDFN 001	SEVER 473 ^b 321 330 340	Physics with Algebra Biology Elective #1 Elect #2, total 32 BIOL s.h. Humanities #2, W TOTAL S.H. ATH SEMESTER (Last chance to Methods Teach Biology EDFN:Issues in Teaching Sec Ed EDFN:Instruc Technology Design	3-4 0-1 3 18 ⁵ take PRAXIS) 1 3	G1 ENGL	EIGHT 461	Humanities #3 or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Student Teaching	3 3 ——————————————————————————————————
PHYS BIOL BIOL G1 BIOL EDFN 001 EDFN 001	SEVER 473 ^b 321 330 340	Physics with Algebra Biology Elective #1 Elect #2, total 32 BIOL s.h. Humanities #2, W TOTAL S.H. NTH SEMESTER (Last chance to Methods Teach Biology EDFN:Issues in Teaching Sec Ed EDFN:Instruc Technology Design EDSE:Content Area Literacy	3-4 0-1 3 18 ⁵ take PRAXIS) 1 3 3	G1 ENGL	EIGHT 461	Humanities #3 or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Student Teaching	3 3 ——————————————————————————————————

^aStudents should take the Pre-Professional Skills Tests (PPST) the 1st semester of freshman year.

NOTE: The perspectives course (P) is waived for BSE program.

^bCHEM 235, BIOL 473, and EDSE 435 are only offered in the Fall semester.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] Note: Student will need to wait until the end of registration to enroll in >17 credits, or one of these courses could be completed during Winter or Summer.

Bachelor's Degree: BSE SAMPLE PROGRAM (126 s.h. minimum) (Less Prepared at Admission)

NOTE: Education students must fill out state and federal forms (Criminal Clearance Acts 34 & 151) EACH year. NOTE: The student must take the PRAXIS test (required by the PDE) at least a semester before student teaching.

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
MATH	101	College Algebra	3	or	221	Concepts of Botany	
ENGL	110	English Composition	3	CHEM	111†	Intro Chemistry I	4
G1		Humanities #1	3	MATH	110*	Trigonometry	4-6
WELL	175	Wellness	3	or	160*	Precalculus	
PPST ^a		Pre-Professional Skills Test		COMM	100	Fundamentals of Speech	3
		TOTAL S.H.	16			TOTAL S.H.	15-17
	THIRD	SEMESTER			FOUR	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	362	Cell & Devel Biology, W	4
or	211	Concepts of Zoology		BIOL	364	Genetics & Molecular	4
CHEM	112†	Intro Chemistry II	4	ESCI		Earth Science, ≥ 200 level	3-4
EDFN	211	Fdns of Modern Ed	3	G1		Literature Course, G1 #2	3
EDFN	241	Psyc Fdns Teaching	3	G3		Social Sciences #2	3
G3		Social Sciences #1, W	3				
		TOTAL S.H.	17			TOTAL S.H.	17-18 [§]
	FIFTH	SEMESTER			SIXTH	SEMESTER	
СНЕМ	FIFTH 235 ^b		4	BIOL	SIXTH 343	SEMESTER Ecology & Evolution	4
CHEM PHYS		SEMESTER Short Course Organic Chem Physcis with Algebra	4 4	BIOL PHYS			4
	235 ^b	Short Course Organic Chem	-		343	Ecology & Evolution	
PHYS	235 ^b	Short Course Organic Chem Physcis with Algebra	4	PHYS	343	Ecology & Evolution Physics with Algebra	4
PHYS G1	235 ^b 131	Short Course Organic Chem Physcis with Algebra Humanities #3, W	4	PHYS G3	343 132	Ecology & Evolution Physics with Algebra Social Sciences #3, D	4
PHYS G1 BIOL	235 ^b 131	Short Course Organic Chem Physcis with Algebra Humanities #3, W Biometry	4 3 3	PHYS G3 CHEM	343 132 326	Ecology & Evolution Physics with Algebra Social Sciences #3, D Biochemistry	4 3 4 3
PHYS G1 BIOL BIOL	235 ^b 131	Short Course Organic Chem Physcis with Algebra Humanities #3, W Biometry Biology Elective #1	4 3 3 3-4	PHYS G3 CHEM	343 132 326	Ecology & Evolution Physics with Algebra Social Sciences #3, D Biochemistry	4 3 4
PHYS G1 BIOL BIOL	235 ^b 131 375	Short Course Organic Chem Physcis with Algebra Humanities #3, W Biometry Biology Elective #1 Elect #2, total 32 BIOL s.h. TOTAL S.H.	4 3 3 3-4 0-1 18 ⁵	PHYS G3 CHEM	343 132 326 312	Ecology & Evolution Physics with Algebra Social Sciences #3, D Biochemistry or alt Advd Writing (AW) TOTAL S.H.	4 3 4 3
PHYS G1 BIOL BIOL BIOL	235 ^b 131 375 SEVEN	Short Course Organic Chem Physcis with Algebra Humanities #3, W Biometry Biology Elective #1 Elect #2, total 32 BIOL s.h. TOTAL S.H.	4 3 3 3-4 0-1 18 [§]	PHYS G3 CHEM ENGL	343 132 326 312	Ecology & Evolution Physics with Algebra Social Sciences #3, D Biochemistry or alt Advd Writing (AW) TOTAL S.H.	4 3 4 3 ———————————————————————————————
PHYS G1 BIOL BIOL BIOL	235 ^b 131 375 SEVEN 473 ^b	Short Course Organic Chem Physcis with Algebra Humanities #3, W Biometry Biology Elective #1 Elect #2, total 32 BIOL s.h. TOTAL S.H. WITH SEMESTER (Last chance to the Methods Teach Biology	4 3 3 3-4 0-1 18 ⁵	PHYS G3 CHEM ENGL	343 132 326 312 EIGHT 461	Ecology & Evolution Physics with Algebra Social Sciences #3, D Biochemistry or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Student Teaching	4 3 4 3
PHYS G1 BIOL BIOL BIOL BIOL	235 ^b 131 375 SEVEN 473 ^b 321	Short Course Organic Chem Physcis with Algebra Humanities #3, W Biometry Biology Elective #1 Elect #2, total 32 BIOL s.h. TOTAL S.H. WITH SEMESTER (Last chance to the Methods Teach Biology EDFN:Issues in Teaching Sec Ed	4 3 3 3-4 0-1 18 ⁵	PHYS G3 CHEM ENGL	343 132 326 312	Ecology & Evolution Physics with Algebra Social Sciences #3, D Biochemistry or alt Advd Writing (AW) TOTAL S.H.	4 3 4 3 ———————————————————————————————
PHYS G1 BIOL BIOL BIOL BIOL EDFN 001 EDFN 001	235 ^b 131 375 SEVEN 473 ^b 321 330	Short Course Organic Chem Physcis with Algebra Humanities #3, W Biometry Biology Elective #1 Elect #2, total 32 BIOL s.h. TOTAL S.H. WITH SEMESTER (Last chance to the Methods Teach Biology EDFN:Issues in Teaching Sec Ed EDFN:Instruc Technology Design	4 3 3 3-4 0-1 18 [§] take PRAXIS)	PHYS G3 CHEM ENGL	343 132 326 312 EIGHT 461	Ecology & Evolution Physics with Algebra Social Sciences #3, D Biochemistry or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Student Teaching	4 3 4 3
PHYS G1 BIOL BIOL BIOL BIOL EDFN 001 EDFN 001	235 ^b 131 375 SEVEN 473 ^b 321 330 340	Short Course Organic Chem Physcis with Algebra Humanities #3, W Biometry Biology Elective #1 Elect #2, total 32 BIOL s.h. TOTAL S.H. WITH SEMESTER (Last chance to the Methods Teach Biology EDFN:Issues in Teaching Sec Ed EDFN:Instruc Technology Design EDSE:Content Area Literacy	4 3 3 3-4 0-1 18 ⁵ take PRAXIS) 1 3 3	PHYS G3 CHEM ENGL	343 132 326 312 EIGHT 461	Ecology & Evolution Physics with Algebra Social Sciences #3, D Biochemistry or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Student Teaching	4 3 4 3
PHYS G1 BIOL BIOL BIOL BIOL EDFN 001 EDFN 001	235 ^b 131 375 SEVEN 473 ^b 321 330 340	Short Course Organic Chem Physcis with Algebra Humanities #3, W Biometry Biology Elective #1 Elect #2, total 32 BIOL s.h. TOTAL S.H. WITH SEMESTER (Last chance to the Methods Teach Biology EDFN:Issues in Teaching Sec Ed EDFN:Instruc Technology Design	4 3 3 3-4 0-1 18 [§] take PRAXIS)	PHYS G3 CHEM ENGL	343 132 326 312 EIGHT 461	Ecology & Evolution Physics with Algebra Social Sciences #3, D Biochemistry or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Student Teaching	4 3 4 3

^aStudents should take the Pre-Professional Skills Tests (PPST) the 1st semester of freshman year.

NOTE: The perspectives course (P) is waived for BSE program.

^bCHEM 235, BIOL 473, and EDSE 435 are only offered in the Fall semester.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] Note: Student will need to wait until the end of registration to enroll in >17 credits, or one of these courses could be completed during Winter or Summer.

Bachelor of Science in Biology: Animal Behavior Option SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
CHEM	111†	Intro Chemistry I	4	CHEM	112†	Intro Chemistry II	4
MATH	161*	Calculus I	4	WELL	175	Wellness	3
ENGL	110	English Composition	3	COMM	100	Fundamentals of Speech	3
		TOTAL S.H.	15			TOTAL S.H.	14
	THIRD	SEMESTER			FOUR	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	343	Ecology & Evolution	4
CHEM	235	Short Course Organic Chem	4	CHEM	326	Biochemistry 1	4
PSYC	100 ³⁸	General Psychology, G3 #1	3	or	375	Environ Chemisty	
G1		Humanities #1	3	BIOL	385	Princ of Animal Behavior	3
		<u>-</u>		G3		Social Sciences #2, W	3
		TOTAL S.H.	14			TOTAL S.H.	14
	SUMN	ΛER SESSION					
BIOL	381	Applied Ethology	3				
or	486	Behavioral Ecology					
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	362	Cell & Devel Bio, W	4	BIOL	364	Genetics & Molecular Bio	4
BIOL		ANBE Elective #1	3	BIOL	435	Animal Physiology	3
PHYS	131	Physics	4	or	484	Mech of Animal Behavior	
G1		Humanities #2, D	3	PHYS	132	Physics II	4
Statistics		BIOL 375, MATH 235 or PSYC 211	3	ENGL		Advanced Writing (AW)	3
		TOTAL S.H.	17			TOTAL S.H.	14
,	SEVEN	ITH SEMESTER			EIGHT	TH SEMESTER	
BIOL		ANBE Elective #2	3	BIOL		ANBE Elective #3	3
Р		Perspectives Course (P)	3	BIOL	472	Seminar in Biol: ANBE	1-2
G1		Humanities #3, W	3	BIOL	-	For total of 46 BIOL s.h.	0-2
G3		Social Sciences #3	3	ELEC		General Elective**	3
BIOL		Practical Experience	1-3	ELEC		General Elective**	3
			. –	ELEC		General Elective**	2-4
		TOTAL S.H.	13-15			TOTAL S.H.	14-16

[◆]CHEM 235 is only offered in the Fall. Students aiming for vet school should take CHEM 231 and 232 in lieu of CHEM 235.

^{**}PSYC 100 is a required-related course and serves as a G3 course; it is also required for PSYC 211 (statistics elective).

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

^{**}Credits needed to bring overall total to 120. Be sure you have taken three W courses, as well as a P & D course.

Bachelor of Science in Biology: Animal Behavior Option SAMPLE PROGRAM (120 s.h. minimum) (Less Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
G1		_ Humanities #1	3	G3		Social Sciences #1, W	3
MATH	101	College Algebra	3	MATH	151*	Calculus for Mgmt & Life Sci.	4
ENGL	110	English Composition	3	COMM	100	Fundamentals of Speech	3
WELL	175	Wellness	3				
		TOTAL S.H.	16			TOTAL S.H.	14
	THIRD) SEMESTER			FOUR	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	343	Ecology & Evolution	4
CHEM	111†	Intro Chemistry I	4	CHEM	112†	Intro Chemistry II	4
PSYC	100 [#]	General Psychology, G3 #2	3	BIOL	385	Princ of Animal Behavior	3
G1		Humanities #2, D	3	G3		Social Sciences #3	3
		TOTAL S.H.	14			TOTAL S.H.	14
		MER SESSION					
BIOL or	381 486	Applied Ethology Behavioral Ecology	3				
	FIFTH	SEMESTER			SIXTH	SEMESTER	•
BIOL	362	Cell & Devel Bio, W	4	BIOL	364	Genetics & Molecular Bio	4
BIOL		ANBE Elective #1	3	BIOL	435	Animal Physiology	3
CHEM	235 [♦]	Short Course Organic Chem	4	or	484	Mech of Animal Behavior	
Statistics		BIOL 375, MATH 235 or PSYC 211	3	CHEM	326	Biochemistry I	4
		-		or	375	Environmental Chemisty	
				ENGL		Advanced Writing (AW)	3
		TOTAL S.H.	14			TOTAL S.H.	14
	SEVEN	ITH SEMESTER			FIGHT	'H SEMESTER	
BIOL		ANBE Elective #2	3	BIOL		ANBE Elective #3	3
Р		Perspectives Course (P)	3	BIOL	472	Seminar in Biol: ANBE	1-2
PHYS	131	Physics I	4	BIOL	-	For total of 46 BIOL s.h.	0-2
G1		Humanities #3, W	3	PHYS	132	Physics II	4
BIOL		Practical Experience	1-3	ELEC	_	General Elective**	3
		-			***************************************	<u></u>	=
				ELEC		General Elective**	0-4

CHEM 235 is only offered in the Fall. Students alming for vet school should take CHEM 231 and 232 in fleu of CHEM 235.

⁹⁶PSYC 100 is a required-related course and serves as a G3 course; it is also required for PSYC 211 (statistics elective).

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

^{**}Credits needed to bring overall total to 120. Be sure you have taken three W courses, as well as a P & D course.

Bachelor of Science in Biology: Botany Option SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
CHEM	111†	Intro Chemistry I	4	or	221	Concepts of Botany	
MATH	160*	Precalculus or Calculus 1	4-5	CHEM	112†	Intro Chemistry II	4
	or 161 (1	L63)		MATH	161†	Calculus I or	3-4
COMM	100	Fundamentals of Speech	3	or o	ther	(II, Stats or CSCI)	
	÷			ENGL	110	English Composition	3
		TOTAL S.H.	15-16			TOTAL S.H.	14-15
	THIDE) SEMESTER			EOUD	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	362		a
or	211	Concepts of Zoology	4	CHEM	232	Cell & Devel Biology, W	4
CHEM	231	Organic Chem I	4	G3	232	Organic Chem II Social Sciences #1	4
WELL	175	Wellness	3	G3 G1		_ Social Sciences #1 Humanities #2	3 3
G1	1,5	Humanities #1, W	3	G1		- Hullianiues #2 -	3
-	***************************************	TOTAL S.H.	14			TOTAL S.H.	14
			-,			TOTAL S.III.	1-7
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	364	Genetics & Molecular Bio	4	BIOL	343	Ecology & Evolution	4
CHEM	326	Biochemistry I	4	PHYS	132	Physics II with Algebra	4
BIOL	325	Plant Systematics	3	BIOL	436	Plant Physiology	3
PHYS	131	Physics I with Algebra	4	G1		Humanities #3	3
				ENGL	312	or alt Advd Writing (AW)	3
		TOTAL S.H.	15			TOTAL S.H.	17
	SEVEN	NTH SEMESTER			EIGHT	H SEMESTER	
BIOL	429	Plant Developmental Bio	3	BIOL		Biology Elective§ #3	3-4
BIOL		Biology Elective§ #1	3-4	BIOL	Elec⁵	#4 for total of 45 BIOL s.h.	3
BIOL		Biology Elective [§] #2	3	BIOL	472	or 470 Seminar in Biology	1-2
G3´		Social Sciences #2, W	3	G3	-	Social Sciences #3, D	3
Р		Perspectives Course (P)	3	ELEC		General Elective**	3
		-		ELEC		General Elective**	2-4
		TOTAL S.H.	15-16			TOTAL S.H.	13-16

 $^{^\}dagger$ Can serve as a G2 required MATH course. § Must be 300-level or above.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Botany Option SAMPLE PROGRAM (120 s.h. minimum) (Less Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
MATH	101	College Algebra	3	or	221	Concepts of Botany	
ENGL	110	English Composition	3	CHEM	111†	Intro Chemistry I	4
G1		_ Humanities #1	3	MATH	110*	Trigonometry/	4-6
WELL	175	Wellness	3	or	160	Precalculus	
				COMM	100	Fundamentals of Speech	3
		TOTAL S.H.	16			TOTAL S.H.	15-17
	THIRE	SEMESTER			FOUR	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	362	Cell & Devel Biology, W	4
or	211	Concepts of Zoology		CHEM	231	Organic Chemistry I	4
CHEM	112†	Intro Chemistry II	4	G3		Social Sciences #2	3
MATH	161†	Calculus I	4	G1		_Humanities #2	3
G3		_Social Sciences #1, W	3	G1		_Humanities #3, W	3
		TOTAL S.H.	15			TOTAL S.H.	17
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	364	Genetics & Molecular Bio	4	BIOL	343	Ecology & Evolution	4
CHEM	232	Organic Chem II	4	Р		Perspectives Course (P)	3
CHEM PHYS	232 131	Organic Chem II Physics I with Algebra	4 4	P PHYS	132	_Perspectives Course (P) Physics II with Algebra	3 4
		_			132	≐ ''	
PHYS	131	Physics I with Algebra	4	PHYS	132	Physics II with Algebra	4
PHYS	131 325	Physics I with Algebra Plant Systematics TOTAL S.H.	4	PHYS		Physics II with Algebra Social Sciences #3, D TOTAL S.H.	3
PHYS BIOL	131 325 SEVEN	Physics I with Algebra Plant Systematics TOTAL S.H.	4 3 15	PHYS G3	EIGHT	Physics II with Algebra Social Sciences #3, D TOTAL S.H. H SEMESTER	4 3 14
PHYS BIOL BIOL	131 325 SEVEN 429	Physics I with Algebra Plant Systematics TOTAL S.H. ITH SEMESTER Plant Developmental Bio	4 3 15	PHYS G3 BIOL		Physics II with Algebra Social Sciences #3, D TOTAL S.H. H SEMESTER Plant Physiology	3 14
PHYS BIOL BIOL CHEM	131 325 SEVEN	Physics I with Algebra Plant Systematics TOTAL S.H. ITH SEMESTER Plant Developmental Bio Biochemistry	4 3 15	PHYS G3 BIOL BIOL	EIGHT 436	Physics II with Algebra Social Sciences #3, D TOTAL S.H. H SEMESTER Plant Physiology Biology Elective [§] #3	3 14 3 2-3
PHYS BIOL BIOL CHEM BIOL	131 325 SEVEN 429	Physics I with Algebra Plant Systematics TOTAL S.H. ITH SEMESTER Plant Developmental Bio Biochemistry Biology Elective [§] #1	4 3 15 3 4 3-4	PHYS G3 BIOL BIOL BIOL	EIGHT 436	Physics II with Algebra Social Sciences #3, D TOTAL S.H. H SEMESTER Plant Physiology Biology Elective [§] #3 #4 for total of 45 BIOL s.h.	3 14 3 2-3 0-2
PHYS BIOL BIOL CHEM BIOL BIOL	131 325 SEVEN 429 326	Physics I with Algebra Plant Systematics TOTAL S.H. ITH SEMESTER Plant Developmental Bio Biochemistry Biology Elective [§] #1 Biology Elective [§] #2	4 3 15 3 4 3-4 3-4	PHYS G3 BIOL BIOL BIOL ENGL	EIGHT 436	Physics II with Algebra Social Sciences #3, D TOTAL S.H. H SEMESTER Plant Physiology Biology Elective [§] #3 #4 for total of 45 BIOL s.h. or alt Advd Writing (AW)	3 14 3 2-3 0-2 3
PHYS BIOL BIOL CHEM BIOL	131 325 SEVEN 429	Physics I with Algebra Plant Systematics TOTAL S.H. ITH SEMESTER Plant Developmental Bio Biochemistry Biology Elective [§] #1	4 3 15 3 4 3-4	PHYS G3 BIOL BIOL BIOL	EIGHT 436	Physics II with Algebra Social Sciences #3, D TOTAL S.H. H SEMESTER Plant Physiology Biology Elective [§] #3 #4 for total of 45 BIOL s.h.	3 14 3 2-3 0-2

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] Must be 300-level or above.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Environmental Biology Optioin SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	. 4	BIOL	211	Concepts of Zoology	4
CHEM	111†	Intro Chemistry I	4	or	221	Concepts of Botany	
MATH	151*	Calculus for Mgmt & Life Sci	4	CHEM	112†	Intro Chemistry II	4
	or 161*	Calculus I		WELL	175	Wellness	3
ENGL	110	English Composition	3	COMM	100	Fundamentals of Speech	3
		TOTAL S.H.	15			TOTAL S.H.	14
	THIRD) SEMESTER			FOLIR	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	375	Biometry or MATH 235	3
or	211	Concepts of Zoology	•	BIOL	343	Ecology & Evolution	4
CHEM	235 ^a	Short Course Organic Chem	4	BIOL	362	Cell & Devel Biology, W	4
PHYS	131†	Physics I with Algebra	4	PHYS	132	Physics II with Algebra	4
G1		Humanities #1, W	3			1 11/2103 // WILLIAMBEDIA	7
	•	TOTAL S.H.	15	•		TOTAL S.H.	15
		SEMESTER			SIXTH	SEMESTER	
BIOL	Elec ^b	346-461 Organismal Bio Crse	3	BIOL	364	Genetics & Molecular Bio	4
G3††		Non-BIOL Environ Science #1	3-4	G3††		Non-BIOL Environ Science #2	3-4
CHEM	375ª	Environmental Chem	4	BIOL	446	Ecosystems, W	3
G1		Humanities #2, D	3	G1		_ Humanities #3	3
BIOL	Elec ^c	325-486 Dir Elec in Adv Eco	3	BIOL	498	Practical Experience	1-3
				or	300	Co-op (research)	
		TOTAL S.H.	16-17			TOTAL S.H.	14-17
	CEV/EN	ITH SEMESTER					
BIOL	Elec		•	B. B.	_	H SEMESTER	
		325-486 Dir Elec in Adv Eco	3	BIOL	Elec [§]	#2 for total of 49 BIOL s.h.	0-2
BIOL	344 ^{§§}	Pop & Comm Ecology	3	ENGL	312	or alt Advd Writing (AW)	3
or P		Perspectives Course (P)		G3/ELEC		Soc Sciences #2/Gen Elec**	3
G3		Social Sciences #1 or #3, W	3		344 ^{§§}	Pop & Comm Ecology	3
BIOL		Biology Elective #1 [§]	3	or P		Perspectives Course (P)	
BIOL	472	Environ Bio Seminar	1-2	G3/ELEC	;	Soc Sciences #3/Gen Elec**	3
				ELEC		General Elective**	2-4
		TOTAL S.H.	13-14			TOTAL S.H.	14-18

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

^{††}Only GEOG 281/295 or ECON 102/207 serve as G3; ECON 207 is a W course.

^aOffered in Fall only / ^{§§}Offered in Fall or Spring, but not both.

^bOrganismal biology courses are BIOL 346, 396, 415, 416, 417, 418, 424 and 461.

^cDirected electives in advanced ecology are BIOL 325, 329, 442, 443, 445, and 486 (BIOL 325 is recommended).

[§] Must be 300-level or above./**Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Environmental Biology Optioin SAMPLE PROGRAM (120 s.h. minimum) (Less Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
WELL	175	Wellness	3	or	221	Concepts of Botany	
MATH	101	College Algebra	3	CHEM	111†	Intro Chemistry I	4
G1		_ Humanities #1	3	MATH	151*	Calculus for Mgmt & Life Sci	4
ENGL	110	English Composition	3	COMM	100	Fundamentals of Speech	3
		TOTAL S.H.	16			TOTAL S.H.	15
	THIRD	SEMESTER			FOUR	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	362	Cell & Devel Biology, W	4
or	211	Concepts of Zoology		BIOL	343	Ecology & Evolution	4
CHEM	112†	Intro Chemistry II	4	G3††		Non-BIOL Environ Science #2	3-4
G3††		Non-BIOL Environ Science #1	3-4	G1		Humanities #2, D	3
G3		Social Science #1, W	3			_	
		TOTAL S.H.	14-15			TOTAL S.H.	14-15
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	Elec ^b	346-461 Organismal Bio Crse	3	BIOL	364	Genetics & Molecular Bio	4
PHYS	131†	Physics I with Algebra	4	PHYS	132	Physics II with Algebra	4
CHEM	235 ^a	Short Course in Organic Chem	4	BIOL	446	Ecosystems, W	3
BIOL	375	Biometry or MATH 235	3	G1		Humanities #3, W	3
BIOL	Elec ^c	325-486 Dir Elec in Adv Eco	3	BIOL	498	Practical Experience	1-3
				or	300	Co-op (research)	(1-3)
		TOTAL S.H.	16-17			TOTAL S.H.	15-17
	SEVEN	ITH SEMESTER			EIGHT	H SEMESTER	
BIOL	$Elec^c$	325-486 Dir Elec in Adv Eco	3	BIOL		Biology Elective #2 [§]	1-3
BIOL	344 ^{§§}	Pop & Comm Ecology	3	or	BIOL	344 ^{§§} Pop & Comm Ecology	(3)
or		BIOL Elective #2 §	(1-3)	BIOL	Elec§	#3 for total of 49 BIOL s.h.	0-4
G3/ELE		Soc Sciences #2/Gen Elec**	3	ENGL	312	or alt Advd Writing (AW)	3
CHEM	375°	Environmental Chem	4	P	~~~	Perspectives Course (P)	
BIOL	472	Environ Bio Seminar	1-2	G3/ELEC		Soc Sciences #3/Gen Elec**	3
5.52	1 J &	with the benefitted	1-2	ELEC		General Elective**	2-3 0-1
		TOTAL S.H.	12-16	LLLC		TOTAL S.H.	9-17
		, with will is	12 10			TOTAL J.II.	3-17

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

^{††}Only GEOG 281/295 or ECON 102/207 serve as G3; ECON 207 is a W course.

 $^{^{\}rm a}{\rm Offered}$ in Fall only / $^{\rm 59}{\rm Offered}$ in Fall or Spring, but not both.

^bOrganismal biology courses are BIOL 346, 396, 415, 416, 417, 418, 424 and 461.

^cDirected electives in advanced ecology are BIOL 325, 329, 442, 443, 445, and 486 (BIOL 325 is recommended).

[§] Must be 300-level or above./**Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Marine Option SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
CHEM	111†	Intro Chemistry I	4	CHEM	112†	Intro Chemistry II	4
MATH	160	Precalculus or Calculus 1	4	MATH	161	Calculus I	4
ENGL	110	English Composition	3	COMM	100	Fundamentals of Speech	3
		TOTAL S.H.	15			TOTAL S.H.	15
DIOL		SEMESTER			FOUR'	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	343	Ecology & Evolution	4
BIOL	291 ^d	Marine Biology	4	BIOL	375	Biometry	3
CHEM	235ª	Short Course in Organic Chem	4	G3		Social Sciences #1	3
WELL	175	Wellness	3_	ESCI	261†	Intro. Oceanography	4
		TOTAL S.H.	15			TOTAL S.H.	14
	CHARA	sed organic					
BIOL	301VIIV 295	TER SESSION ^C					
BIOL	293 396	Marine Invertebrates Marine Ichthyology	3 3				
		TOTAL S.H.	6				
			-				
	FIFTH S	SEMESTER			SIXTH	SEMESTER	
BIOL	362	Cell & Devel Biol, W	4	BIOL	364	Genetics & Molecular Bio	4
PHYS	131	Physics I with Algebra	4	PHYS	132	Physics II with Algebra	4
CHEM	375 ^a	Chem Elective	3-4	ESCI	363	Chem Elective	3-4
or		G1 Humanities #1		or		G1 Humanities #1	•
G3	¥	Social Sciences #2, D	3	G3		Social Sciences #3, W	3
		TOTAL S.H.	14-15	•		TOTAL S.H.	14-15
		•					
2101	SUMM	ER SESSION ^C					
BIOL		Biological Oceanography	<u>3</u>				
		TOTAL S.H.	3				
	SEVEN	TH SEMESTER			FIGHTI	I SEMESTER	
BIOL	472	Marine Biology Seminar	1-2		-	#2 for total of 47 BIOL s.h.	2.4
BIOL		Biology Elective§ #1	3-4	G1 -	LICC		3-4
		or alt Advd Writing (AW)	3-4	B .		Humanities #3, W Perspectives Course (P)	3
G1		Humanities #2	3	ELEC _		General Elective**	3
ELEC .		General Elective**	3			General Liective	3
•		TOTAL S.H.	12-15			TOTAL S.H.	12-13
			-			16 WILL	77-73

^aCHEM 235 and CHEM 375 are offered in Fall only/^bESCI 363 is offered in Spring of odd years.

^cAt a marine field station, such as the Chincoteague Bay Field Station, Wallops Island, VA.

^dBIOL 291, taken at MU, may be replaced by BIOL 290 & BIOL 292, taken in combination, at a field station (not counting as field station courses - see footnote c).

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] Must be 300-level or above/**Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Marine Option SAMPLE PROGRAM (120 s.h. minimum) (LessPrepared at Admission)

	FIRST	SEMESTER			SECON	ID SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
MATH	101	College Algebra	3	MATH	151*	Calculus for Mgmt & Life Sci	4
WELL	175	Wellness	3	COMM	100	Fundamentals of Speech	3
ENGL	110	English Composition	3	G3		Social Sciences #1	3
G1		Humanities #1	3		-	-	
		TOTAL S.H.	16			TOTAL S.H.	14
	THIRD	SEMESTER			FOUR	TH SEMESTER	
BIOL	375	Biometry	3	BIOL	221	Concepts of Botany	4
BIOL	291 ^d	Marine Biology	4	CHEM	112†	Intro Chemistry II	4
CHEM	111†	Intro Chemistry I	4	G1		Humanities #2, W	3
G3		Social Sciences #2, D	3	ESCI	261†	Intro. Oceanography	4
-		TOTAL S.H.	14			TOTAL S.H.	15
		en erceiosi ^c			÷		
BIOL	SUMN 295	IER SESSION ^C Marine Invertebrates	3				
BIOL	396	Marine Invertebrates Marine Ichthyology	3				
5.02	230	TOTAL S.H.	6				
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	343	Ecology & Evolution	4	BIOL	362	Cell & Devel Biol, W	4
CHEM	235 ^a	Short Course in Organic Chem	4	BIOL	Elec⁵	#2 for total of 47 BIOL s.h.	1-4
ENGL	312	or alt Advd Writing (AW)	3	ESCI	363	Chem Elective	3-4
BIOL		Biology Elective ⁵ #1	2-4	or		G1 Humanities #3	
DIOL		_ 5.0.05) 1.000.00		Р		Perspectives Course (P)	3
		TOTAL S.H.	13-15			TOTAL S.H.	13-14
	SEIMA	ΛER SESSION ^C					
BIOL	50.1111	Biological Oceanography	3				
		TOTAL S.H.	3				
	SEVE	NTH SEMESTER			EIGH	TH SEMESTER	
BIOL	472	Marine Biology Seminar	1-2	ELEC		General Elective**	3
BIOL	364	Genetics & Molecular	4	ELEC		General Elective**	3
PHYS	131	Physics I with Algebra	4	PHYS	132	Physics II with Algebra	4
CHEM	_	Chem Elective	3-4				
or	-,-	G1 Humanities #3					
		TOTAL S.H.	12-14			TOTAL S.H.	10

^aCHEM 235 and CHEM 375 are offered in Fall only/^bESCI 363 is offered in Spring of odd years.

^cAt a marine field station, such as the Chincoteague Bay Field Station, Wallops Island, VA.

^dBIOL 291, taken at MU, may be replaced by BIOL 290 & BIOL 292, taken in combination, at a field station (not counting as field station courses - see footnote c).

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] Must be 300-level or above/**Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Medical Technology SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
CHEM	111†	Intro Chemistry I	4	CHEM	112†	Intro Chemistry II	4
COMM	100	Fundamentals of Speech	3	MATH	160*	Precalculus or Calculus 1	4-5
G1		Humanities #1	3		or 161(1	63)	
		- .		ENGL	110	English Composition	3
		TOTAL S.H.	14			TOTAL S.H.	15-16
	THIRD) SEMESTER			FOUR	TH SEMESTER	
BIOL	257 ^b	Intro to Allied Health	1	BIOL	362	Cell & Devel Biology, W	4
CHEM	235 ^b	Short Course in Organic Chem	4	BIOL		Biology Elective #2ª	3-5
BIOL		Biology Elective #1 ^a	3-5	CHEM	326	Biochemistry I	4
G3		Social Sciences #1, W	3	G3		Social Sciences #2, D	3
WELL	175	Wellness	3			-	
		TOTAL S.H.	14-16			TOTAL S.H.	14-16
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	364	Genetics & Molecular Bio	4	BIOL	454 ^b	Immunology	2
BIOL	461	General Micobiology	3	BIOL	Elec #3	To a total of ≥8 BIOL s.h.	0-2
PHYS	131†	Physics I with Algebra	4	ENGL	312	or alt Advd Writing (AW)	3
G1		Humanities #2, W	3	P		Perspectives Course (P)	3
G3		Social Sciences #3	3	G1		Humanities #3	3
		-		ELEC		General Elective**	0-4
		TOTAL S.H.	17			TOTAL S.H.	11-17

CLINICAL YEAR IS WORTH 30 TRANSFER CREDITS.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

^aRecommended Biology Electives: BIOL 356 (5 s.h.) or BIOL 254 (4 s.h.) & BIOL 255 (4 s.h.); and BIOL 375 (3 s.h.)

^bBIOL 257 and CHEM 235 offered only in Fall Semester; BIOL 454 offered only in Spring Semester.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Medical Technology SAMPLE PROGRAM (120 s.h. minimum) (Less Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
MATH	101	College Algebra	3	CHEM	111†	Intro Chemistry I	4
ENGL	110	English Composition	3	MATH	110*	Trigonometry/	4-6
G1		_ Humanities #1	3	or	160	Precalculus	
WELL	175	Wellness .	3	COMM	100	Fundamentals of Speech	3
		TOTAL S.H.	16			TOTAL S.H.	15-17
	THIRE) SEMESTER			FOUR'	TH SEMESTER	
BIOL	257 ^b	Intro to Allied Health	1	BIOL	362	Cell & Devel Biology, W	4
CHEM	112†	Intro Chemistry II	4	BIOL		Biology Elective #2ª	3-5
BIOL		Biology Elective #1 ^a	3-5	BIOL	364	Genetics & Molecular	4
G3		Social Sciences #1, D	3	G1		Humanities #3	3
G1		_ Humanities #2, W	3_			-	
		TOTAL S.H.	14-16			TOTAL S.H.	14-16
	FIFTH	SEMESTER			SIXTH	SEMESTER	
CHEM	235 ^b	Short Course in Organic Chem	4	BIOL	454 ^b	Immunology	2
BIOL	461	General Micobiology	3	CHEM	326	Biochemistry I	4
PHYS	131†	Physics I with Algebra	4	ENGL	312	or alt Advd Writing (AW)	3
G3		Social Sciences #2, W	3	P		Perspectives Course (P)	3
G3		Social Sciences #3	3	BIOL	Elec #3	^a To a total of ≥8 BIOL s.h.	0-3
		_		ELEC		General Elective**	0
		TOTAL S.H.	17		 	TOTAL S.H.	12-15

CLINICAL YEAR IS WORTH 30 TRANSFER CREDITS.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

^aRecommended Biology Electives: BIOL 356 (5 s.h.) or BIOL 254 (4 s.h.) & BIOL 255 (4 s.h.); and BIOL 375 (3 s.h.)

^bBIOL 257 and CHEM 235 offered only in Fall Semester; BIOL 454 offered only in Spring Semester.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Molecular Biology/Biotechnology Option SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
CHEM	111†	Intro Chemistry I	4	or	221	Concepts of Botany	
MATH	160*	Precalculus or Calculus 1	4-5	CHEM	112†	Intro Chemistry II	4
	or 161(1	63)		MATH	161†	Calculus I or	3-4
COMM	100	Fundamentals of Speech	3	or o	ther	(II, Stats or CSCI)	
				ENGL	110	English Composition	3
		TOTAL S.H.	15-16			TOTAL S.H.	14-15
	THIRD) SEMESTER			FOUR	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	362	Cell & Devel Biology, W	4
or	211	Concepts of Zoology		CHEM	232	Organic Chem II	4
CHEM	231	Organic Chem I	4	PHYS	132	Physics II with Algebra	4
PHYS	131†	Physics I with Algebra	4	G1		_ Humanities #1	3
WELL	175	Wellness	3				
		TOTAL S.H.	15			TOTAL S.H.	15
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL			4	BIOL	SIXTH 343	SEMESTER Ecology & Evolution	4
BIOL CHEM	364	Genetics & Molecular Bio	4 4	BIOL CHEM			4
CHEM		Genetics & Molecular Bio Biochemistry I	4	CHEM	343	Ecology & Evolution	
CHEM G1	364	Genetics & Molecular Bio Biochemistry I Humanities #2	4 3	CHEM G3	343 327†	Ecology & Evolution Biochemistry II Social Sciences #2	4 3
CHEM	364	Genetics & Molecular Bio Biochemistry I	4	CHEM	343	Ecology & Evolution Biochemistry II	4
CHEM G1	364	Genetics & Molecular Bio Biochemistry I Humanities #2 Social Sciences #1, W TOTAL S.H.	4 3 3	CHEM G3	343 327 [†] 312	Ecology & Evolution Biochemistry II Social Sciences #2 or alt Advd Writing (AW) TOTAL S.H.	4 3 3
CHEM G1 G3	364 326†	Genetics & Molecular Bio Biochemistry I Humanities #2 Social Sciences #1, W TOTAL S.H.	4 3 3 14	CHEM G3 ENGL	343 327† 312	Ecology & Evolution Biochemistry II Social Sciences #2 or alt Advd Writing (AW) TOTAL S.H.	4 3 3 14
CHEM G1 G3 BIOL	364 326† SEVEI 462	Genetics & Molecular Bio Biochemistry I Humanities #2 Social Sciences #1, W TOTAL S.H. NTH SEMESTER Molecular Biology, W	4 3 3 14	CHEM G3 ENGL BIOL	343 327† 312 EIGH' 472	Ecology & Evolution Biochemistry II Social Sciences #2 or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Seminar in Biology (MOL)	4 3 3 14
G1 G3 BIOL BIOL	364 326†	Genetics & Molecular Bio Biochemistry I Humanities #2 Social Sciences #1, W TOTAL S.H. NTH SEMESTER Molecular Biology, W 463, 465 or 467 recommended	4 3 3 14	CHEM G3 ENGL BIOL BIOL	343 327† 312 EIGH 472 466	Ecology & Evolution Biochemistry II Social Sciences #2 or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Seminar in Biology (MOL) Molecular & Cell Techniques	1-2 3
G1 G3 BIOL BIOL G3	364 326† SEVEI 462	Genetics & Molecular Bio Biochemistry I Humanities #2 Social Sciences #1, W TOTAL S.H. NTH SEMESTER Molecular Biology, W 463, 465 or 467 recommended Social Sciences #3	4 3 3 14 4 3-4 3	CHEM G3 ENGL BIOL BIOL BIOL	343 327† 312 EIGH' 472 466 Elec [§]	Ecology & Evolution Biochemistry II Social Sciences #2 or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Seminar in Biology (MOL) Molecular & Cell Techniques 463, 465 or 467 recommended	1-2 3 3-4
G1 G3 BIOL BIOL G3 D	364 326† SEVEI 462	Genetics & Molecular Bio Biochemistry I Humanities #2 Social Sciences #1, W TOTAL S.H. NTH SEMESTER Molecular Biology, W 463, 465 or 467 recommended Social Sciences #3 Diversity Course (D)	4 3 3 14 4 3-4 3 3	CHEM G3 ENGL BIOL BIOL BIOL BIOL	343 327† 312 EIGH 472 466	Ecology & Evolution Biochemistry II Social Sciences #2 or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Seminar in Biology (MOL) Molecular & Cell Techniques 463, 465 or 467 recommended For total of 39 BIOL s.h.	1-2 3 3-4 0-1
G1 G3 BIOL BIOL G3	364 326† SEVEI 462	Genetics & Molecular Bio Biochemistry I Humanities #2 Social Sciences #1, W TOTAL S.H. NTH SEMESTER Molecular Biology, W 463, 465 or 467 recommended Social Sciences #3	4 3 3 14 4 3-4 3	CHEM G3 ENGL BIOL BIOL BIOL BIOL P	343 327† 312 EIGH' 472 466 Elec [§]	Ecology & Evolution Biochemistry II Social Sciences #2 or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Seminar in Biology (MOL) Molecular & Cell Techniques 463, 465 or 467 recommended For total of 39 BIOL s.h. Perspectives Course (P)	1-2 3 3-4 0-1 3
G1 G3 BIOL BIOL G3 D	364 326† SEVEI 462	Genetics & Molecular Bio Biochemistry I Humanities #2 Social Sciences #1, W TOTAL S.H. NTH SEMESTER Molecular Biology, W 463, 465 or 467 recommended Social Sciences #3 Diversity Course (D)	4 3 3 14 4 3-4 3 3	CHEM G3 ENGL BIOL BIOL BIOL P ELEC	343 327† 312 EIGH' 472 466 Elec [§]	Ecology & Evolution Biochemistry II Social Sciences #2 or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Seminar in Biology (MOL) Molecular & Cell Techniques 463, 465 or 467 recommended For total of 39 BIOL s.h. Perspectives Course (P) General Elective**	1-2 3 3-4 0-1 3
G1 G3 BIOL BIOL G3 D	364 326† SEVEI 462	Genetics & Molecular Bio Biochemistry I Humanities #2 Social Sciences #1, W TOTAL S.H. NTH SEMESTER Molecular Biology, W 463, 465 or 467 recommended Social Sciences #3 Diversity Course (D)	4 3 3 14 4 3-4 3 3	CHEM G3 ENGL BIOL BIOL BIOL BIOL P	343 327† 312 EIGH' 472 466 Elec [§]	Ecology & Evolution Biochemistry II Social Sciences #2 or alt Advd Writing (AW) TOTAL S.H. TH SEMESTER Seminar in Biology (MOL) Molecular & Cell Techniques 463, 465 or 467 recommended For total of 39 BIOL s.h. Perspectives Course (P)	1-2 3 3-4 0-1 3

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] Must be 300-level or above.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Molecular Biology/Biotechnology Option SAMPLE PROGRAM (120 s.h. minimum) (Less Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
MATH	101	College Algebra	3	or	221	Concepts of Botany	7
COMM	100	Fundamentals of Speech	3	CHEM	111†	Intro Chemistry I	.4
WELL	175	Wellness	3	MATH	110*	Trigonometry/	4-6
G1		_ Humanities #1	3	or	160	Precalculus	, 0
				ENGL	110	English Composition	3
		TOTAL S.H.	16			TOTAL S.H.	15-17
j							
		SEMESTER			FOUR	TH SEMESTER	
BIOL	221	Concepts of Botany	4	BIOL	362	Cell & Devel Biology, W	4
or	211	Concepts of Zoology		CHEM	231	Organic Chem I	4
CHEM	112†	Intro Chemistry II	4	D		Diversity Course (D)	3
MATH	161†	Calculus 1	4	G1		Humanities #3	3
G1		_ Humanities #2	3	G3		Social Sciences #1	. 3
		TOTAL S.H.	15			TOTAL S.H.	17
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	364	Genetics & Molecular Bio	4	BIOL	343	Ecology & Evolution	4
CHEM	232	Organic Chem II	4	PHYS	132	Physics II with Algebra	4
PHYS	131	Physics I with Algebra	4	G3		Social Sciences #3, W	3
G3		Social Sciences #2	3	BIOL	Elec⁵	463, 465 or 467 recommended	3-4
		TOTAL S.H.	15			TOTAL S.H.	14-15
	SEVEN	ITH SEMESTER			EIGHT	H SEMESTER	
BIOL	462	Molecular Biology, W	4	BIOL	472	Seminar in Biology (MOL)	1-2
CHEM	326	Biochemistry I	4	BIOL	466	Molecular & Cell Techniques	3
BIOL	Elec⁵	463, 465 or 467 recommended	3-4	СНЕМ	327†	Biochemistry II	4
BIOL	Elec⁵	For total of 39 BIOL s.h.	0-1	or	324	Plant Biochemistry	**
ENGL	312	or alt Advd Writing (AW)	3	Р		Perspectives Course (P)	3
		 ,	-	ELEC		General Elective**	0-2
		TOTAL S.H.	14-15			TOTAL S.H.	11-14
							TT_T4

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] Must be 300-level or above.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Nuclear Medicine Option SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
CHEM	111†	Intro Chemistry I	4	CHEM	112†	Intro Chemistry II	4
COMM	100	Fundamentals of Speech	3	MATH	160*	Precalculus or Calculus 1	4-5
G1		_Humanities #1	3		or 161(1	.63)	
				ENGL	110	English Composition	3
		TOTAL S.H.	14			TOTAL S.H.	15-16
	THIRE	SEMESTER			FOUR	TH SEMESTER	
BIOL	257 ^a	Intro to Allied Health	1	BIOL	356 ^a	Functional Human Anatomy	5
CHEM	235 ^a	Short Course in Organic Chem	4	CHEM	326	Biochemistry I	4
BIOL	362	Cell & Devel Biol, W	4	BIOL	375	Biometry	3
G3		Social Sciences #1	3	G3		Social Sciences #2, W	3
WELL	175	- Wellness	3			-	J
		TOTAL S.H.	15			TOTAL S.H.	15
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	364	Genetics & Molecular Bio	4	PHYS	132	Physics with Algebra II	Л
PHYS	131†	Physics with Algebra I	4	ENGL	312	or alt Advd Writing (AW)	4
G1		Humanities #2, W	3	G1	312	Humanities #3	3
P		Perspectives Course (P)	3	ELEC		General Elective**	3
G3		Social Sciences #3, D	3	ELEC		General Elective**	3
		TOTAL S.H.	17	LLLC	e	TOTAL S.H.	2-3
		The second desires	#1			IUIALS.M.	<i>15-16</i>

CLINICAL YEAR IS WORTH 28 CREDITS.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

^aBIOL 257 and CHEM 235 offered only in Fall Semester; BIOL 356 offered only in Spring Semester.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Nuclear Medicine Option SAMPLE PROGRAM (120 s.h. minimum) (Less Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
MATH	101	College Algebra	3	CHEM	111†	Intro Chemistry I	4
ENLG	110	English Composition	3	MATH	110*	Trigonometry/	4-6
G1		Humanities #1	3	or:	160	Precalculus	
WELL	175	Wellness	3	COMM	100	Fundamentals of Speech	3
		TOTAL S.H.	16			TOTAL S.H.	15-17
	THIRD) SEMESTER			FOUR	TH SEMESTER	
BIOL	257ª	Intro to Allied Health	1	BIOL	356ª	Functional Human Anatomy	5
CHEM	112†	Intro Chemistry II	4	BIOL	364	Genetics & Molecular	4
BIOL	362	Cell & Devel Biol, W	4	G1		Humanities #3, W	3
G3		Social Sciences #1	3	G3		Social Sciences #2	3
G1		Humanities #2, D	3				
		TOTAL S.H.	15			TOTAL S.H.	15
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	375	Biometry	3	PHYS	132	Physics with Algebra II	4
PHYS	131†	Physics with Algebra I	4	ENGL	312	or alt Advd Writing (AW)	3
CHEM	235 ^a	Short Course in Organic Chem	4	CHEM	326	Biochemistry I	4
G3		Social Sciences #3, W	3	Р		Perspectives Course (P)	3
		-		ELEC		General Elective**	1-3
		TOTAL S.H.	17			TOTAL S.H.	15-16

CLINICAL YEAR IS WORTH 28 CREDITS.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

 $^{^{\}mathrm{a}}\mathrm{BIOL}$ 257 and CHEM 235 offered only in Fall Semester; BIOL 356 offered only in Spring Semester.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Pre-Optometry Option SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	Λ
CHEM	111†	Intro Chemistry I	4	CHEM	112†	Intro Chemistry II	4
MATH	160*	Precalculus or Calculus 1	4-5	MATH	161†	Calculus I or	4
	or 161(163)	•	or othe		(II, Stats or CSCI)	3-4
COMM	100	Fundamentals of Speech	3	ENGL	110	English Composition	_
		·		G1	110	Humanities #1	3
		TOTAL S.H.	15-16			-	
		, 0 , , , , , , , , , , , , , , , , , ,	13-10			TOTAL S.H.	17-18 [§]
	THIRD	SEMESTER			FOUR	TH SEMESTER	
BIOL	375	Biometry	3	BIOL	362	Cell & Devel Biology, W	4
PSYC	100	General Psychology (G3 #1)	3	CHEM	232	Organic Chem II	4
CHEM	231	Organic Chem I	4	PHYS	132	Physics II with Algebra	4
PHYS	131	Physics I with Algebra	4	WELL	175	Wellness	4
G1		Humanities #2, W	3		2,0	Welliness	3
		TOTAL S.H.				TOTALCH	
			17			TOTAL S.H.	15
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	364	Genetics & Molecular Bio	4	BIOL	472	Senior Seminar	1-2
BIOL	461	General Microbiology	3	CHEM	326	Biochemistry I	1-2 4
P		Perspectives Course (P)	3	ENGL	312	or alt Advd Writing (AW)	3
G1		Humanities #3	3	G3		Social Sciences #3, D	
G3		Social Sciences #2, W	3	ELEC		General Elective**	3
•		TOTAL S.H.	16	LLLC .	·	•	3-6
			10			TOTAL S.H.	15-17

CLINICAL YEAR IS WORTH 23 CREDITS.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] NOTE: Student will need to wait until the end of registration to enroll in >17 credits, or one of these courses could be completed during Winter or Summer.

^aBIOL 356 Functional Human Anatomy (5 s.h.) and/or BIOL 438 Neurobiology (3 s.h.) are recommended.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Pre-Optometry Option SAMPLE PROGRAM (120 s.h. minimum) (Less Prepared at Admission)

		SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
MATH	101	College Algebra	3	CHEM	111†	Intro Chemistry I	4
ENGL	110	English Composition	3	MATH	110*	Trigonometry/	4-6
G1		_ Humanities #1	3	or:	160	Precalculus	4-0
WELL	175	Wellness	3	сомм	100	Fundamentals of Speech	3
		TOTAL S.H.	16			TOTAL S.H.	15-17
	THIRE) SEMESTER			FOUR	TH SEMESTER	
BIOL	375	Biometry	3	BIOL	362	Cell & Devel Biology, W	. 4
PSYC	100	General Psychology (G3 #1)	3	CHEM	231	Organic Chem I	4
CHEM	112†	Intro Chemistry II	4	PHYS	132	Physics II with Algebra	4
PHYS	131†	Physics I with Algebra	4	G1		Humanities #2, D	3
MATH	161	Calculus I	4				3
		TOTAL S.H.	18 [§]			TOTAL S.H.	15
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	364	Genetics & Molecular Bio	4		472	Senior Seminar	1-2
BIOL	461	General Microbiology	3	CHEM	326	Biochemistry I	4
CHEM	232	Organic Chem II	4	ENGL	312	or alt Advd Writing (AW)	3
G1		Humanities #3	3	G3		Social Sciences #3, W	3
G3		Social Sciences #2, W	3	P		Perspectives Course (P)	3
				ELEC		General Elective** ^a	0-2
		TOTAL S.H.	17	-		TOTAL S.H.	14-17
							47 1/

CLINICAL YEAR IS WORTH 23 CREDITS.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] NOTE: Student will need to wait until the end of registration to enroll in >17 credits, or one of these courses could be completed during Winter or Summer.

^aBIOL 356 Functional Human Anatomy (5 s.h.) and/or BIOL 438 Neurobiology (3 s.h.) are recommended.

^{**}Credits required If needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Pre-Podiatry Option SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4
CHEM	111†	Intro Chemistry I	4	CHEM	112†	Intro Chemistry II	4
MATH	160*	Precalculus or Calculus 1	4-5	MATH⁵	161†	Calculus I	4
	or 161(1	.63)		ENGL	110	English Composition	3
COMM	100	Fundamentals of Speech	3				
		TOTAL S.H.	15-16			TOTAL S.H.	15
	THIRD) SEMESTER			FOUR	TH SEMESTER	
BIOL	275ª	Intro to Allied Health	1	BIOL	356ª	Functional Human Anatomy	5
CHEM	231	Organic Chem I	4	CHEM	232	Organic Chem II	4
PHYS	131	Physics I with Algebra	4	PHYS	132	Physics II with Algebra	4
BIOL	362	Cell & Devel Biol, W	4	WELL	175	Wellness	3
G3		Social Sciences #1	3				
		TOTAL S.H.	16			TOTAL S.H.	16
	FIFTH	SEMESTER			SIXTH	SEMESTER	
BIOL	364	Genetics & Molecular Bio	4	ENGL	312	or alt Advd Writing (AW)	3
BIOL	435°	Animal Physiology	3	P		Perspectives Course (P)	3
CHEM	326	Biochemistry	4	G1		Humanities #2, W	3
G1		Humanities #1	3	G1		Humanities #3	3
G3		Social Sciences #2, W	3	G3		Social Sciences #3, D	3
				ELEC		General Elective** ^a	1-2
		TOTAL S.H.	17		_	TOTAL S.H.	16-17

CLINICAL YEAR IS WORTH 24 CREDITS.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] Take a General Elective for ≥3 s.h. if Calculus I requirement has already been completed.

^aBIOL 257 and BIOL 435 offered only in Fall Semester; BIOL 356 offered only in Spring semester.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Pre-Podiatry Option SAMPLE PROGRAM (120 s.h. minimum) (Less Prepared at Admission)

	FIRST SEMESTER			SECOND SEMESTER					
BIOL	101	Foundations of Biology	4	BIOL	211	Concepts of Zoology	4		
MATH	101	College Algebra	3	CHEM	111†	Intro Chemistry I	4		
ENGL	110	English Composition	3	MATH	110*	Trigonometry/	4-6		
G1		Humanities #1	3	or 3	160	Precalculus			
WELL	175	Wellness	3	COMM	100	Fundamentals of Speech	3		
		TOTAL S.H.	16			TOTAL S.H.	15-17		
	THIRE) SEMESTER			FOUR	TH SEMESTER			
BIOL	257 ^a	Intro to Allied Health	1	BIOL	356 ^a	Functional Human Anatomy	5		
BIOL	362	Cell & Devel Biol, W	4	CHEM	231	Organic Chem I	4		
CHEM	112†	Intro Chemistry II	4	PHYS	132	Physics II with Algebra	4		
PHYS	131†	Physics I with Algebra	4	G3		Social Sciences #1, W	3		
MATH	161	Calculus I	4			-			
		TOTAL S.H.	17			TOTAL S.H.	16		
	FIFTH	SEMESTER			SIXTH	SEMESTER			
BIOL	364	Genetics & Molecular Bio	4	CHEM	326	Biochemistry I	4		
BIOL	435 ^a	Animal Physiology	3	ENGL	312	or alt Advd Writing (AW)	3		
CHEM	232	Organic Chem II	4	G1		Humanities #3	3		
G1		Humanities #2	3	G3		Social Sciences #3, W	3		
G3		– Social Sciences #2, D	3	Р		Perspectives Course (P)	3		
		TOTAL S.H.	17			TOTAL S.H.	16		

CLINICAL YEAR IS WORTH 24 CREDITS.

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

[§] Take a General Elective for ≥3 s.h. if Calculus I requirement has already been completed.

^aBIOL 257 and BIOL 435 offered only in Fall Semester; BIOL 356 offered only in Spring semester.

^{**}Credits required if needed to bring overall total to 120 s.h.

Bachelor of Science in Biology: Respiratory Therapy SAMPLE PROGRAM (120 s.h. minimum) (Well-Prepared at Admission)

	FIRST	SEMESTER			SECO	ND SEMESTER	
BIOL	101	Foundations of Biology	4	CHEM	112†	Intro Chemistry II	4
CHEM	111†	Intro Chemistry I	4	MATH	161†	Calculus I	
MATH	160*	Precalculus or Calculus 1	4-5	ENGL	110	English Composition	4 3
	or 161			G 1		Humanities #1	3
COMM	100	Fundamentals of Speech	3				•
		TOTAL S.H.	15-16			TOTAL S.H.	14
	THIRE	SEMESTER			FOUI	RTH SEMESTER	
BIOL	275 ⁶	Intro to Allied Health	1	BIOL	362	Cell & Devel Biol, W	4
CHEM	235 [§]	Short Course in Organic Chem	4	G3		Social Sciences #2 ^a	
PHYS	131	Physics I with Algebra	4	G1		Humanities #3	3
G1		Humanities #2, D	3	WELL	175	Wellness	3
G3		Social Sciences #1, W	3				3
		TOTAL S.H.	16			TOTAL S.H.	13
	FIFTH	SEMESTER			SIXTI	I SEMESTER	
BIOL	364	Genetics & Molecular Bio	4	ENGL	312	or alt Advd Writing (AW)	3
BIOL	461	General Microbiology	3	CHEM	326	Biochemistry I	4
P		Perspectives Course (P)	3	BIOL	356 [§]	Functional Human Anatomy	5
G3		Social Sciences #3, W ^b	3	ELEC		General Elective ^c	2-3
ELEC		General Elective ^b	3	ELEC		General Elective	
		TOTAL S.H.	16	2220		TOTAL S.H.	0-1 16-17
	CHAR						10 17
RESP	410	AER SESSION				NTH SEMESTER	
RESP	411	Acute Cardipulmonary Care Resp Care Techniques I	2	RESP	413	Resp Assessment & Therapy	4
RESP	412	Princ of Aerosol & Gas Ther	2	RESP	421	Phys Mechanical Ventilation	2
RESP	422	Pharmacology	3 2	RESP RESP	414	Resp Care Techniques II	3
RESP	420	Arterial Blood Gas Analysis	3	RESP	460 425	Clinical Practice I	2
			3	RESP	425 419	Neonatalogy	2
		TOTAL S.H.	12	NESI	413	Resp Care in Alt Sites TOTAL S.H.	2
						TOTAL S.M.	15
DECE		R SESSION			EIGHT	H SEMESTER**	
RESP	461	Clinical Practicum I	1	BIOL	352	Nutritional Science	3
				RESP	417	Resp Care Techniques III (W)	3
				RESP	415	Tech Aspects Mech Vent	3
				RESP	423	Infectious Diseases	2
				RESP	424	Non-Infectious Diseases	2
		_		RESP	462	Clinical Practice II	2
		TOTAL S.H.	1			TOTAL S.H.	15
	SUMM	ER SESSION			NINTH	SEMESTER	
RESP	463	Clinical Practicum II	2	RESP	464	Clinical Practicum III	10
			-	RESP	495	Resp Care Research	10
		TOTAL S.H.	2	11231	700	TOTAL S.H.	2
			4			IVIAL S.A.	12

[†] Can serve a a non-BIOL G2 course / * Can serve as a G2 required MATH course.

⁹Psychology 100 is a recommended G3 course.

[§]BIOL 257 and CHEM 235 offered only in Fall Semester; BIOL 356 offered only in the Spring Semester.

^bIt is recommended that students take their 3rd writing course on campus; however, RESP 417 offered in the clinical phase can be counted as a 3rd writing course at the completion of the program.

^cCredits required if needed to bring overall total to 120 s.h.

^{**}Students will have earned enough credits to graduate after completion of this spring term.

Bachelor of Science in Biology: Respiratory Therapy SAMPLE PROGRAM (120 s.h. minimum) (Less Prepared at Admission)

	FIRST	SEMESTER			SECON	ND SEMESTER	
BIOL	101	Foundations of Biology	4	CHEM	111†	Intro Chemistry I	4
MATH	101	College Algebra	3	MATH	110*	Trigonometry/	4-6
G1		Humanities #1	3	or	160	Precalculus	
WELL	175	Wellness	3	G3		Social Sciences #1ª	3
COMM	100	Fundamentals of Speech	3	ENGL	110	English Composition	3
		TOTAL S.H.	16			TOTAL S.H.	14-16
	THIRD	SEMESTER			FOUR	TH SEMESTER	
BIOL	275 [§]	Intro to Allied Health	1	BIOL	364	Genetics & Molecular	4
CHEM	112†	Intro Chemisty II	4	BIOL	356 [§]	Functional Human Anatomy	5
BIOL	362	Cell & Devel Biol., W	4	G3		Social Sciences #2, W	3
MATH	161†	Calculus I	4	G1		Humanities #3	3
G1		Humanities #2, D	3				
		TOTAL S.H.	16			TOTAL S.H.	15
	FIFTH	SEMESTER			SIXTH	SEMESTER	
CHEM	235 [§]	Short Course in Organic Chem	4	ENGL	312	or alt Advd Writing (AW)	3
BIOL	461	General Microbiology	3	CHEM	326	Biochemistry I	4
PHYS	131	Physics I with Algebra	4	P		Perspectives Course (P)	3
G3		Social Sciences #3, W ^b	3	ELEC		General Elective ^c	1-3
		TOTAL S.H.	14		•	TOTAL S.H.	11-13
	SUMI	VIER SESSION			SEVE	NTH SEMESTER	
RESP	410	Acute Cardipulmonary Care	2	RESP	413	Resp Assessment & Therapy	4
RESP	411	Resp Care Techniques I	2	RESP	421	Phys Mechanical Ventilation	2
RESP	412	Princ of Aerosol & Gas Ther	3	RESP	414	Resp Care Techniques II	3
RESP	422	Pharmacology	2	RESP	460	Clinical Practice I	2
RESP	420	Arterial Blood Gas Analysis	3	RESP	425	Neonatalogy	2
				RES₽	419	Resp Care in Alt Sites	<u>2</u> 15
		TOTAL S.H.	12			TOTAL S.H.	15
	WINT	'ER SESSION				TH SEMESTER**	
RESP	461	Clinical Practicum I	1	BIOL	352	Nutritional Science	3
				RESP	417	Resp Care Techniques III (W)	3
				RESP	415	Tech Aspects Mech Vent	3
				RESP	423	Infectious Diseases	2
				RESP	424	Non-Infectious Diseases	2
				RESP	462	Clinical Practice II	2
		TOTAL S.H.	1			TOTAL S.H.	15
	SUMI	MER SESSION			NINT	H SEMESTER	
RESP	463	Clinical Practicum II	2	RESP	464	Clinical Practicum III	10
				RESP	495	Resp Care Research	2
		TOTAL S.H.	2			TOTAL S.H.	12

 $[\]dagger$ Can serve as a G2 required MATH course.

^aPsychology 100 is a recommended G3 course.

[§]BIOL 257 and CHEM 235 offered only in Fall Semester; BIOL 356 offered only in the Spring Semester.

^bIt is recommended that students take their 3rd writing course on campus; however, RESP 417 offered in the clinical phase can be counted as a 3rd writing course at the completion of the program.

^cCredits required if needed to bring overall total to 120 s.h.

^{**}Students will have earned enough credits to graduate after completion of this spring term.