

III. BIOLOGICAL SCIENCES

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8-Semester Plans

Biology B.S. with Biomedical Concentration

Course #	Course Name	Credits	Course #	Course Name	Credits
First Year – Fall			First Year – Spring		
IDFY 101	First Year Seminar*	3	IDCR 151	Created and Called*	3
Varies	1 st language requirement*	3	Varies	2 nd language requirement*	3
BIOL 170	Cell and Animal Physiology	4	WELL 1xx	Wellness*	1
BIOL 171	Biological Sciences Cornerstone	1	BIOL 172	Diversity of Life and Plant Science	4
CHEM 105	General Chemistry I ^a	4	CHEM 106	General Chemistry II	4
Total		15	Total		15
Sophomore – Fall			Sophomore – Spring		
Varies	3 rd language or cross-cultural**†	3	COMM 105	Oral Communication*	3
BIOL 260	Genetics	4	BIBL 2xx	Knowledge of the Bible*	3
CHEM 309	Organic Chemistry I	4	BIOL 262	Ecology	4
MATH 108/111	Calculus	3-4	CHEM 310	Organic Chemistry II	4
			STAT 269	Introductory Statistics	3
Total		14-15	Total		17
Junior – Fall			Junior – Spring		
PHIL 10x	Philosophy*	3	Varies	1 st Social Science/History meeting QuEST*	3
PHYS 201	Introductory Physics I ^b	4	THEO 2xx	Christian Beliefs*	3
BIOL 460 <i>or</i> Varies	Physiology <i>or</i> Free Elective	3-4	BIOL 460 <i>or</i> Varies	Physiology <i>or</i> Free Elective	3-4
BIOL xxx	Molecular and Cellular Elective ^c <i>or</i> Organismal and Biodiversity Elective ^d <i>or</i> Selected Major Elective ^e	3-4	BIOL xxx	Molecular and Cellular Elective ^c <i>or</i> Organismal and Biodiversity Elective ^d <i>or</i> Selected Major Elective ^e	3-4
			Varies	Ethics, World View or Pluralism*	3
Total		13-15	Total		15-17
Senior – Fall			Senior – Spring		
Varies	2 nd Social Science/History meeting QuEST*	3	Varies	Non-Western Studies*	2-3
Varies	Art, Music, Dance, or Theatre meeting QuEST*	3	ENGL 1xx	Literature meeting QuEST*	3
BIOL 495 <i>or</i> Varies	Natural Sciences Capstone <i>or</i> Free Elective	3	BIOL 495 <i>or</i> Varies	Natural Sciences Capstone <i>or</i> Free Elective	3
BIOL xxx	Molecular and Cellular Elective ^c <i>or</i> Organismal and Biodiversity Elective ^d <i>or</i> Selected Major Elective ^e	3-4	BIOL xxx	Molecular and Cellular Elective ^c <i>or</i> Organismal and Biodiversity Elective ^d <i>or</i> Selected Major Elective ^e	3-4
Varies	Free Elective	3	Varies	Elective – need min of 12 credits for full-time	1 or 0
Total		15-16	Total		12-13

*QuEST requirement

** Alternate year course

† Discipline specific BIOL 301 in alternate year May terms can substitute for 3rd language/cross cultural requirement.

^a Students should take CHEM 105 in the Fall of their first-year. Those for whom CHEM 101 is necessary should enroll in CHEM 105 in the Spring, and CHEM 106 in the Summer term.

^b Students may take PHYS 211 General Physics I or PHYS 202 Introductory Physics II in place of PHYS 201

^c **Cellular and Molecular Electives:**

BIOL 375 Developmental Biology**
BIOL 380 Genomics and Disease**
BIOL 416 Cancer and Cell Biology**
BIOL 418 Immunology**

^d **Organismal and Biodiversity Electives:**

BIOL 325 Medicinal Botany**
BIOL 332 Plant Taxonomy and Systematics**
BIOL 456 Ornithology**
BIOL 458 Herpetology**

^e **Selected Major Electives:**

BIOL 265 Microbiology
BIOL 301 Health Care in the Developing World**†
BIOL 375 Developmental Biology**
BIOL 380 Genomics and Disease**
BIOL 416 Cancer and Cell Biology**
BIOL 418 Immunology**
BIOL 465 Gross Anatomy
BIOL 470 Neuroscience
CHEM 410 Biochemistry I

Biology (B.S.) with Organismal Concentration 8 Semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
IDFY 101	First Year Seminar*	3	IDCR 151	Created and Called for Community*	3
Varies	1 st language requirement*	3	Varies	2 nd language requirement*	3
BIOL 170	Cell and Animal Physiology	4	WELL 1xx	Wellness*	1
BIOL 171	Biological Sciences Cornerstone	1	BIOL 172	Diversity of Life and Plant Science	4
CHEM 105	General Chemistry I ^a	4	CHEM 106	General Chemistry II	4
TOTAL		15	TOTAL		15
Sophomore – Fall			Sophomore – Spring		
Varies	3 rd language or cross-cultural*†	3	COMM 105	Oral Communication*	3
BIOL 260	Genetics	4	BIBL 2xx	Knowledge of the Bible*	3
CHEM 309	Organic Chemistry I	4	BIOL 262	Ecology	4
MATH 108/111	Calculus	3-4	CHEM 310	Organic Chemistry II	4
			STAT 269	Introductory Statistics	3
TOTAL		14-15	TOTAL		17
Junior – Fall			Junior – Spring		
PHIL 10x	Philosophy*	3	Varies	1 st Social Science/History meeting QuEST*	3
PHYS 201	Introductory Physics I ^b	4	THEO 2xx	Christian Beliefs*	3
BIOL 265	Microbiology	4	Varies	Ethics, World View or Pluralism*	3
BIOL xxx <i>or</i> ENVS xxx	Plant Taxonomy and Systematics** <i>or</i> Organismal and Biodiversity Elective ^c <i>or</i> Selected Major Elective ^d	3-4	BIOL xxx <i>or</i> ENVS xxx	Organismal and Biodiversity Elective ^c <i>or</i> Selected Major Elective ^d	3-4
			Varies	Free Elective	3
TOTAL		14-15	TOTAL		14-16
Senior – Fall			Senior – Spring		
Varies	2 nd Social Science/History meeting QuEST*	3	Varies	Non-Western Studies*	2-3
Varies	Art, Music, Dance, or Theatre meeting QuEST*	3	ENGL 1xx	Literature meeting QuEST*	3
Varies	Free Elective	3	Varies	Free Elective	3
BIOL 495 <i>or</i> Varies	Natural Sciences Capstone <i>or</i> Free Elective	3	BIOL 495 <i>or</i> Varies	Natural Sciences Capstone <i>or</i> Free Elective	3
BIOL xxx <i>or</i> ENVS xxx	Plant Taxonomy and Systematics** <i>or</i> Organismal and Biodiversity Elective ^c <i>or</i> Selected Major Elective ^d	3-4	BIOL xxx <i>or</i> ENVS xxx	Organismal and Biodiversity Elective ^c <i>or</i> Selected Major Elective ^d	3-4
TOTAL		15-16	TOTAL		14-16

*QuEST requirement

** Alternate year course

† Discipline specific BIOL 304 in alternate year May terms can substitute for 3rd language/cross cultural requirement

^a Students should take CHEM 105 in the Fall of their first-year. Those for whom CHEM 101 is necessary should enroll in CHEM 105 in the Spring, and CHEM 106 in the Summer term.

^b Students may take PHYS 211 General Physics I or PHYS 202 Introductory Physics II in place of PHYS 201

^c **Organismal and Biodiversity Electives:**

BIOL 348 Animal Behavior**

BIOL 456 Ornithology**

BIOL 458 Herpetology**

^d **Selected Major Electives:**

ENVS 270 Environmental Techniques and Policy: Terrestrial**

ENVS 271 Environmental Techniques and Policy: Water and Wetlands**

BIOL 302 Rocky Mountain Ecosystems**

BIOL 304 Tropical Biology**

BIOL 336 Restoration Ecology**

BIOL 348 Animal Behavior**

BIOL 375 Developmental Biology**

BIOL 380 Genomics and Disease**

BIOL 456 Ornithology**

BIOL 458 Herpetology**

Any of the Au Sable Institute courses approved for this major

Biology (B.S.) with General Concentration 8 Semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
IDFY 101	First Year Seminar*	3	IDCR 151	Created and Called for Community*	3
Varies	1 st language requirement*	3	Varies	2 nd language requirement*	3
BIOL 170	Cell and Animal Physiology	4	WELL 1xx	Wellness*	1
BIOL 171	Biological Sciences Cornerstone	1	BIOL 172	Diversity of Life and Plant Science	4
CHEM 105	General Chemistry I ^a	4	CHEM 106	General Chemistry II	4
TOTAL		15	TOTAL		15
Sophomore – Fall			Sophomore – Spring		
Varies	3 rd language or cross-cultural**†	3	COMM 105	Oral Communication*	3
BIOL 260	Genetics	4	BIOL 262	Ecology	4
CHEM 309	Organic Chemistry I	4	CHEM 310	Organic Chemistry II	4
MATH 108/111	Calculus	3-4	STAT 269	Introductory Statistics	3
TOTAL		14-15	TOTAL		14
Junior – Fall			Junior – Spring		
BIBL 2xx	Knowledge of the Bible*	3	Varies	Non-Western Studies*	2-3
Varies	1 st Social Science/History meeting QuEST*	3	Varies	2 nd Social Science/History meeting QuEST*	3
Varies	Free Elective	3	Varies	Free Elective	3
PHYS 201	Introductory Physics I ^b	4	PHIL 10x	Philosophy*	3
BIOL xxx	Form and Function ^c or Plant Science ^d or Cellular and Molecular ^e or Selected Major Elective ^f	3-4	BIOL xxx	Form and Function ^c or Plant Science ^d or Cellular and Molecular ^e or Selected Major Elective ^f	3-4
TOTAL		16-17	TOTAL		14-16
Senior – Fall			Senior – Spring		
Varies	Art, Music, Dance, or Theatre meeting QuEST*	3	Varies	Ethics, World View or Pluralism*	3
THEO 2xx	Christian Beliefs*	3	Varies	Free Elective	3
ENGL 1xx	Literature meeting QuEST*	3	BIOL xxx	Selected Major Elective ^f	3-4
BIOL 495 or Varies	Natural Sciences Capstone ^b or Free Elective	3	BIOL 495 or Varies	Natural Sciences Capstone ^c or Free Elective	3
BIOL xxx	Form and Function ^c or Plant Science ^d or Cellular and Molecular ^e or Selected Major Elective ^f	3-4	BIOL xxx	Form and Function ^c or Plant Science ^d or Cellular and Molecular ^e or Selected Major Elective ^f	3-4
TOTAL		15-16	TOTAL		15-1

*QuEST requirement

** Alternate year course

† Discipline specific BIOL 304 in alternate year May terms can substitute for 3rd language/cross cultural requirement

^a † Discipline specific BIOL 301 or BIOL 304 in alternate year May terms can substitute for 3rd language requirement

^a Students should take CHEM 105 in the Fall of their first-year. Those for whom CHEM 101 is necessary should enroll in CHEM 105 in the Spring, and CHEM 106 in the Summer term.

^b Students may take PHYS 211 General Physics I or PHYS 202 Introductory Physics II in place of PHYS 201

^c **Form and Function Electives:**

BIOL 456 Ornithology**
 BIOL 458 Herpetology**
 BIOL 460 Physiology
 BIOL 465 Gross Anatomy

^f **Selected Major Electives:**

BIOL 265 Microbiology
 BIOL 301 Health Care in the Developing World**†
 BIOL 302 Rocky Mountain Ecosystems**
 BIOL 304 Tropical Biology**†

BIOL 470 Neuroscience

^d ***Plant Science Electives:***

BIOL 332 Plant Taxonomy and Systematics**

BIOL 325 Medicinal Botany**

BIOL 336 Restoration Ecology**

^e ***Cellular and Molecular Electives:***

BIOL 375 Developmental Biology**

BIOL 380 Genomics and Disease**

BIOL 416 Cancer and Cell Biology**

BIOL 418 Immunology**

BIOL 325 Medicinal Botany**

BIOL 332 Plant Taxonomy and Systematics**

BIOL 336 Restoration Ecology**

BIOL 348 Animal Behavior**

BIOL 375 Developmental Biology**

BIOL 380 Genomics and Disease**

BIOL 416 Cancer and Cell Biology**

BIOL 418 Immunology**

BIOL 456 Ornithology**

BIOL 458 Herpetology**

BIOL 460 Physiology

BIOL 465 Gross Anatomy

BIOL 470 Neuroscience

Biology (B.S.) with Secondary Teaching Certification 8 Semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
IDFY 101	First Year Seminar*	3	IDCR 151	Created and Called for Community*	3
Varies	1 st language requirement*	3	Varies	2 nd language requirement*	3
WELL 1xx	Wellness*	1	COMM 105 ^a	Oral Communication*	3
BIOL 170	Cell and Animal Physiology	4	BIOL 172	Diversity of Life and Plant Science	4
BIOL 171	Biological Sciences Cornerstone	1	CHEM 106	General Chemistry II	4
CHEM 105	General Chemistry I ^d	4		Submit the three required security clearances. (FBI, Child Abuse, Criminal) by 3/31	
TOTAL		16	TOTAL		17
Sophomore – Fall			Sophomore – Spring		
Varies	3 rd language requirement* [†]	3	BIOL 262	Ecology	4
ENGL 1xx ^a	Literature meeting QuEST*	3	STAT 269	Introductory Statistics	3
BIOL 260	Genetics	4	EDSP 207 ^c	Intro to Special Ed	3
CHEM 204	Organic Chemistry for Life Sciences	4	EDUC 203 ^c	Educational Psychology	3
MATH 108/111	Calculus	3-4	EDUC 208 ^b	Teaching English Language Learners	3
			EDUC 210 ^c	Sophomore Field Experience	0
				Submit Teacher Ed. Program application by 3/31	
TOTAL		17-18	TOTAL		16
Junior – Fall			Junior – Spring		
BIBL 2xx	Knowledge of the Bible*	3	EDSP 307 ^b	Inclusion Practices	3
HDFS 311	Adolescent Development	3	EDUC 310 ^{b c}	Junior Field Experience	0
PHIL 10x	Philosophy*	3	EDUC 331 ^{b c}	Instruct. Design & Assessment	3
PHYS 201	Introductory Physics I ^e	4	EDUC 346 ^b	Sociocultural Perspectives on Education	3
BIOL xxx	Selected Major Elective ^f	3-4	SCIE 307	Teaching Lab Sciences in Secondary Educ.	1
	Submit professional semester app by 11/1		ESS 201	Earth and Space Science	3
			BIOL xxx	Selected Major Elective ^f	3-4
TOTAL		16-17	TOTAL		17
Senior – Fall			Senior – Spring		
	Professional Semester		HIST 1xx	History meeting QuEST*	3
TEP 407 ^{b c}	Student Teaching Seminar	1	THEO 2xx	Christian Beliefs*	3
TEP 410 ^{b c}	Secondary Pre-Student Teaching Experience	0	Varies	Art, Music, Dance, or Theatre meeting QuEST*	3
TEP 435 ^{b c}	Student Teaching: Secondary	9	BIOL 495	Natural Sciences Capstone	3
EDUC 420 ^{b c}	Professional Issues in Education	2	BIOL xxx	Selected Major Elective ^f	3-4
TOTAL		12	TOTAL		15-16

Notes:

* QuEST requirement

** Alternate year course

† Discipline specific BIOL 301 or BIOL 304 in alternate year May terms can substitute for 3rd language requirement

^a Indicates requirement for admission to the TEP

^b Indicates a course that cannot be taken until the student is admitted to the TEP

^c Indicates courses that must be taken concurrently

^d Students should take CHEM 105 in the Fall of their first-year. Those for whom CHEM 101 is necessary should enroll in CHEM 105 in the Spring, and CHEM 106 in the Summer term.

^e Students may take PHYS 211 General Physics I or PHYS 202 Introductory Physics II in place of PHYS 201

^f ***Selected Major Electives:***

- BIOL 265 Microbiology
- BIOL 301 Health Care in the Developing World**†
- BIOL 302 Rocky Mountain Ecosystems**
- BIOL 304 Tropical Biology**†
- BIOL 325 Medicinal Botany**
- BIOL 332 Plant Taxonomy and Systematics**
- BIOL 336 Restoration Ecology**
- BIOL 348 Animal Behavior**
- BIOL 375 Developmental Biology**
- BIOL 380 Genomics and Disease**
- BIOL 416 Cancer and Cell Biology**
- BIOL 418 Immunology**
- BIOL 456 Ornithology**
- BIOL 458 Herpetology**
- BIOL 460 Physiology
- BIOL 465 Gross Anatomy
- BIOL 470 Neuroscience

Biopsychology B.S. (Bioscience track) 8 Semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
IDFY 101	First Year Seminar*	3	IDCR 151	Created and Called for Community*	3
BIOL 170	Cell and Animal Physiology ^a	4	WELL 1xx	Wellness*	1
BIOL 171	Biological Sciences Cornerstone ^a	1	BIOL 172	Diversity of Life and Plant Science ^a	4
CHEM 105	General Chemistry I ^b	4	CHEM 106	General Chemistry II	4
PSYC 101	Introduction to Psychology	3	PSYC 209	Life Span Development	3
TOTAL		15	TOTAL		15
Sophomore – Fall			Sophomore – Spring		
COMM 105	Oral Communication*	3	Varies	1 st language requirement*	3
STAT 269 <i>or</i>	Introductory Statistics ^e (recommended) <i>or</i>	3	MATH xxx <i>or</i>	Math meeting QuEST* ^e (if PSYC 271 taken)	3
PSYC 271	Statistical Methods in Psychology ^e	3	Varies	<i>or</i> Free Elective	3
BIOL 260	Genetics ^a	4	BIBL 2xx	Knowledge of the Bible*	3
CHEM 309	Organic Chemistry I ^c	4	CHEM 310	Organic Chemistry II ^c	4
			PSYC 272	Research Methods in Psychology	3
TOTAL		14	TOTAL		16
Junior – Fall			Junior – Spring		
Varies	2 nd language requirement*	3	Varies	3 rd language requirement* ^f	3
Varies	Art, Music, Dance, or Theatre meeting QuEST*	3	PHIL 10x <i>or</i>	Philosophy ^f <i>or</i>	3
Varies	Non-Western Studies*	2-3	Varies	Religion meeting QuEST*	3
Varies	Free Elective	3	Varies	Free Elective	3
BIOL 470	Neuroscience	3	BIOL xxx	Selected Major Elective ^g	3-4
PSYC 350	Biological Basis of Behavior	3	PSYC 351	Sensation and Perception	3
TOTAL		17-18	TOTAL		15-16
Senior – Fall			Senior – Spring		
ENGL 1xx	Literature meeting QuEST*	3	Varies	Ethics, World View or Pluralism*	3
PSYC 345 <i>or</i>	Cognition <i>or</i>	3	HIST 1xx	History meeting QuEST*	3
PSYC 319	Abnormal Psychology	3	THEO 2xx	Christian Beliefs*	3
PSYC 408	Experimental Psychology	3	Varies	Free Elective	3
BIOL xxx <i>or</i>	Selected Major Elective ^{d g} <i>or</i>	3-4	Varies	Free Elective	3
Varies	Free Elective	3-4	BIOL 495 <i>or</i>	Natural Sciences Capstone <i>or</i>	3
BIOL 495 <i>or</i>	Natural Sciences Capstone <i>or</i>	3	PSYC 494 <i>or</i>	Psychology Seminar <i>or</i> Free Elective	3
PSYC 494 <i>or</i>	Psychology Seminar <i>or</i> Free Elective	3	Varies	Free Elective	3
Varies	Free Elective	3			
TOTAL		15-16	TOTAL		15

Notes:

* QuEST requirement

** Alternate year course

^a Students may alternatively select the Allied-Health Track, taking BIOL 185, 186, 189 and PSYC 099 in place of BIOL 170, 171, 172, and 260.

^b Students should take CHEM 105 in the Fall of their first-year. Those for whom CHEM 101 is necessary should enroll in CHEM 105 in the Spring, and CHEM 106 in the Summer term.

^c Students may take CHEM 204 in place of CHEM 309 and 310.

^d Needed only if CHEM 204 taken in place of CHEM 309 and 310.

^e Students may take PSYC 271 and a Mathematical Science meeting QuEST in place of STAT 269.

^f Recommended. Philosophy is pre-requisite for BIOL 495 Natural Sciences Capstone.

⁹ ***Selected Major Electives:***

BIOL 265 Microbiology

BIOL 348 Animal Behavior**

BIOL 375 Developmental Biology**

BIOL 380 Genomics and Disease**

BIOL 416 Cancer and Cell Biology**

BIOL 418 Immunology**

BIOL 460 Physiology

BIOL 465 Gross Anatomy

Environmental Science 8 Semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
IDFY 101	First Year Seminar*	3	IDCR 151	Created and Called for Community*	3
Varies	1 st language requirement*	3	Varies	2 nd language requirement*	3
BIOL 170	Cell and Animal Physiology	4	WELL 1xx	Wellness*	1
BIOL 171	Biological Sciences Cornerstone	1	BIOL 172	Diversity of Life and Plant Science	4
CHEM 105	General Chemistry I ^a	4	CHEM 106	General Chemistry II	4
TOTAL		15	TOTAL		15
Sophomore – Fall			Sophomore – Spring		
Varies	3 rd language or cross-cultural*†	3	Varies	Philosophy or Religion meeting QuEST*	3
COMM 105	Oral Communication*	3	BIOL 262	Ecology	4
BIBL 2xx	Knowledge of the Bible*	3	STAT 269	Introductory Statistics	3
GEOL 201	Foundations of Geology	4	CHEM 240 <i>or</i> Varies	Environmental Chemistry** <i>or</i> Art, Music, Dance, or Theatre meeting QuEST*	3-4
CHEM 204	Organic Chemistry for the Life Sciences	4			
TOTAL		17	TOTAL		13-14
Junior – Fall			Junior – Spring		
Varies	2 nd Social Science/History meeting QuEST*	3	Varies	1 st Social Science/History meeting QuEST*	3
ENGL 1xx	Literature meeting QuEST*	3	ENVS 495 <i>or</i> THEO 2xx	Environmental and Sustainability Studies Capstone** <i>or</i> Christian Beliefs*	3
ENVS 315	Environmental Ethics	3	CHEM 240 <i>or</i> Varies	Environmental Chemistry** <i>or</i> Art, Music, Dance, or Theatre meeting QuEST*	3-4
BIOL 332 <i>or</i> Varies	Plant Taxonomy and Systematics** <i>or</i> Select Major Elective ^b	3-4	BIOL 336 <i>or</i> Varies	Restoration Ecology** <i>or</i> Select Major Elective ^b	3-4
ENVS 270 <i>or</i> ENVS 271	Environmental Techniques and Policy (Terrestrial <i>or</i> Water and Wetlands)**	2	GIS 245 <i>or</i> BIOL 4xx	Introduction to Geographic Information Sys. <i>or</i> Ornithology** <i>or</i> Herpetology**	3-4
TOTAL		14-15	TOTAL		15-18
Senior – Fall			Senior – Spring		
Varies	Non-Western Studies*	2-3	Varies	Electives	3-5
Varies	Free Electives	6-8	ENVS 495 <i>or</i> THEO 2xx	Environmental and Sustainability Studies Capstone** <i>or</i> Christian Beliefs*	3
BIOL 332 <i>or</i> Varies	Plant Taxonomy and Systematics** <i>or</i> Select Major Elective ^b	3-4	BIOL 336 <i>or</i> Varies	Restoration Ecology** <i>or</i> Select Major Elective ^b	3-4
ENVS 270 <i>or</i> ENVS 271	Environmental Techniques and Policy (Terrestrial <i>or</i> Water and Wetlands)**	2	GIS 245 <i>or</i> BIOL 4xx	Introduction to Geographic Information Sys. <i>or</i> Ornithology** <i>or</i> Herpetology**	3-4
TOTAL		13-17	TOTAL		12-16

Notes:

* QuEST requirement

** Alternate year course

† Discipline specific BIOL 304 in alternate year May terms can substitute for 3rd language requirement

^a Students should take CHEM 105 in the Fall of their first-year. Those for whom CHEM 101 is necessary should enroll in CHEM 105 in the Spring, and CHEM 106 in the Summer term.

^b **Selected Major Electives:**

BIOL 265 Microbiology

BIOL 302 Rocky Mountain Ecosystems**
BIOL 304 Tropical Biology**†
BIOL 348 Animal Behavior**
BIOL 456 Ornithology**
BIOL 458 Herpetology**
ENGR 353 Environmental Engineering
ENGR 451 Water and Water Management**
ENGR 453 Hazardous Water and Air Pollution**
Any of the Au Sable Institute courses approved for this major

Molecular Biology B.S. 8 Semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
IDFY 101	First Year Seminar*	3	IDCR 151	Created and Called for Community*	3
Varies	1 st language requirement*	3	Varies	2 nd language requirement*	3
BIOL 170	Cell and Animal Physiology	4	WELL 1xx	Wellness*	1
BIOL 171	Biological Sciences Cornerstone	1	BIOL 172	Diversity of Life and Plant Biology	4
CHEM 105	General Chemistry I ^a	4	CHEM 106	General Chemistry II	4
		TOTAL			15
Sophomore – Fall			Sophomore – Spring		
Varies	3 rd language or cross cultural**†	3	COMM 105	Oral Communication*	3
MATH 108/111	Calculus	3-4	Varies	1 st Social Science ^b /History meeting QuEST*	3
BIOL 260	Genetics	4	BIBL 2xx	Knowledge of the Bible*	3
CHEM 309	Organic Chemistry I	4	STAT 269	Introductory Statistics	3
			CHEM 310	Organic Chemistry II	4
		TOTAL			14-15
Junior – Fall			Junior – Spring		
Varies	2 nd Social Science ^b /History meeting QuEST*	3	BIOL 380 <i>or</i> BIOL 416	Genomics and Disease** <i>or</i> Cancer and Cell Biology**	3-4
BIOL 375 <i>or</i> BIOL xxx	Developmental Biology <i>or</i> Selected Major Elective ^d	3-4	BIOL 416 <i>or</i> Varies	Selected Major Elective ^d <i>or</i> Free Elective	3-4
CHEM 410	Biochemistry I	4	PHIL 10x	Philosophy*	3
PHYS 201	Introductory Physics I ^c	4	Varies	Non-Western Studies*	2-3
			THEO 2xx	Christian Beliefs*	3
		TOTAL			14-15
Senior – Fall			Senior – Spring		
Varies	Ethics, World View or Pluralism*	3	Varies	Art, Music, Dance, or Theatre meeting QuEST*	3
ENGL 1xx	Literature meeting QuEST*	3	Varies	Free Elective	3
Varies	Free Elective	3	BIOL 416 <i>or</i> Varies	Selected Major Elective ^d <i>or</i> Free Elective	3-4
BIOL 495 <i>or</i>	Natural Sciences Capstone <i>or</i>	3	BIOL 495 <i>or</i>	Natural Sciences Capstone <i>or</i>	3
BIOL 375 <i>or</i> BIOL xxx	Developmental Biology <i>or</i> Selected Major Elective ^d	3-4	BIOL 380 <i>or</i> BIOL 416	Genomics and Disease** <i>or</i> Cancer and Cell Biology**	3-4
		TOTAL			15-16
TOTAL			TOTAL		
15-16			15-17		

*QuEST requirement

Notes:

* QuEST requirement

** Alternate year course

† Discipline specific BIOL 301 in alternate year May terms can substitute for 3rd language requirement

^a Students should take CHEM 105 in the Fall of their first-year. Those for whom CHEM 101 is necessary should enroll in CHEM 105 in the Spring, and CHEM 106 in the Summer term.

^b Students interested in pre-genetic counseling should take PSYC 101 as a pre-requisite for PSYC 323 Counseling Theories.

^c Students may take PHYS 211 General Physics I or PHYS 202 Introductory Physics II in place of PHYS 201

^d **Selected Major Electives:**

BIOL 265 Microbiology

BIOL 301 Health Care in the Developing World**†

BIOL 325 Medicinal Botany**
BIOL 418 Immunology**
BIOL 460 Physiology
PSYC 323 Counseling Theories^a

Sustainability Studies (B.A.) with Community Development concentration 8-semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
First Year – Fall			First Year – Spring		
COMM 105	Fundamentals of Oral Communication*	3	IDCR 151	Created and Called for Community*	3
IDFY 101	First Year Seminar*	3	varies	2 nd Language*	3
PHIL/RELI	Philosophy/Religion*	3	STAT 269	Statistics or Quest mathematics	3-4
ENVS 140	Intro to Ecology & Sustainability** (meets lab sci)	3	SOAN 212	Cultural Anthropology (meets NW)	3
varies	1 st Language course*	3	HIST 1xx	History*	3
TOTAL		15	TOTAL		15-16
Sophomore – Fall			Sophomore – Spring		
varies	3 rd Language or Cross-Cultural*	3	Varies	Art, Music, Theatre or Dance*	3
BIBL 20x	Knowledge of the Bible*	3	WELL 1xx	Wellness Course*	1
Varies	Major Elective (ECON 117, POLI 113, SOAN 315 or STAT 269)	3	GIS 245	Intro to Geographic Information System (alt year) or Major Elective (ECON 117, POLI 113, SOAN 315 or STAT 269)	3
ENVS 216	Environmental Issues (meets STW)	3	BIOL 162	Plant Biology	3
CHEM 103	Chemical Science	3	ENGL 1xx	Literature* (suggested: 174)	3
			Varies	Minor or Free Elective	2-3
TOTAL		15	TOTAL		15-16
Junior – Fall			Junior – Spring		
ENVS 315	Environmental Ethics (meets Ethics)	3	SOAN 310	Food, Power and Society (meets social sci)	3
BIOL 334	Plant Ecology	3	BIOL 335	Plant Propagation	3
Varies	Concentration Elective	3	GIS 245	Intro to Geographic Information System (alt year) or Major Elective (ECON 117, POLI 113, SOAN 315 or STAT 269)	3
varies	Minor or Free Elective	3	Varies	Concentration Elective	3
Varies	Concentration Elective	3	varies	Minor or Free Elective	3
TOTAL		15	TOTAL		15
Senior – Fall			Senior – Spring		
varies	Minor or Free Elective or Study Abroad	3	SUST 495	Environmental Science and Sustainability Capstone	3
varies	Minor or Free Elective or Study Abroad	3	INTE 391 OR SOAN 395	Internship Practicum	3
varies	Minor or Free Elective or Study Abroad	3	varies	Minor or Free Elective	3
varies	Minor or Free Elective or Study Abroad	3	varies	Minor or Free Elective	3
varies	Minor or Free Elective or Study Abroad	3	varies	Minor or Free Elective	3
TOTAL		15	TOTAL		15

*QuEST requirement

- ECON 117 and GIS 245 alternate years but BOTH occur in the same spring).
- This does not include your AuSable Institute options of BIOL\AGRIC\GEOG 303- Tropical Agriculture which meets in May term in Costa Rica or BIOL\AGRIC\GEOG 343 International Development and Environmental Sustainability which meets in Washington State mid-July through Mid-August. Financial Aid deadlines for these courses are 12/15 of the winter before, 2/15 and 3/15 of the course year.