

### **III. BIOLOGICAL SCIENCES**

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## 8-Semester Plans

### Biology B.S. with Biomedical Concentration

Course #	Course Name	Credits	Course #	Course Name	Credits
<b>First Year – Fall</b>			<b>First Year – Spring</b>		
IDFY 101	First Year Seminar*	3	IDCR 151	Created and Called*	3
Varies	1 <sup>st</sup> language requirement*	3	Varies	2 <sup>nd</sup> 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 <sup>a</sup>	4	CHEM 106	General Chemistry II	4
<b>Total</b>		<b>15</b>	<b>Total</b>		<b>15</b>
<b>Sophomore – Fall</b>			<b>Sophomore – Spring</b>		
Varies	3 <sup>rd</sup> 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
<b>Total</b>		<b>14-15</b>	<b>Total</b>		<b>17</b>
<b>Junior – Fall</b>			<b>Junior – Spring</b>		
PHIL 10x	Philosophy*	3	Varies	1 <sup>st</sup> Social Science/History meeting QuEST*	3
PHYS 201	Introductory Physics I <sup>b</sup>	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 <sup>c</sup> <i>or</i> Organismal and Biodiversity Elective <sup>d</sup> <i>or</i> Selected Major Elective <sup>e</sup>	3-4	BIOL xxx	Molecular and Cellular Elective <sup>c</sup> <i>or</i> Organismal and Biodiversity Elective <sup>d</sup> <i>or</i> Selected Major Elective <sup>e</sup>	3-4
			Varies	Ethics, World View or Pluralism*	3
<b>Total</b>		<b>13-15</b>	<b>Total</b>		<b>15-17</b>
<b>Senior – Fall</b>			<b>Senior – Spring</b>		
Varies	2 <sup>nd</sup> 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
SCIE 495 <i>or</i> Varies	Natural Sciences Capstone <i>or</i> Free Elective	3	SCIE 495 <i>or</i> Varies	Natural Sciences Capstone <i>or</i> Free Elective	3
BIOL xxx	Molecular and Cellular Elective <sup>c</sup> <i>or</i> Organismal and Biodiversity Elective <sup>d</sup> <i>or</i> Selected Major Elective <sup>e</sup>	3-4	BIOL xxx	Molecular and Cellular Elective <sup>c</sup> <i>or</i> Organismal and Biodiversity Elective <sup>d</sup> <i>or</i> Selected Major Elective <sup>e</sup>	3-4
Varies	Free Elective	3	Varies	Elective – need min of 12 credits for full-time	1 or 0
<b>Total</b>		<b>15-16</b>	<b>Total</b>		<b>12-13</b>

\*QuEST requirement

\*\* Alternate year course

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

<sup>a</sup> 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.

<sup>b</sup> Students may take PHYS 211 General Physics I or PHYS 202 Introductory Physics II in place of PHYS 201

<sup>c</sup> ***Cellular and Molecular Electives:***

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

<sup>d</sup> ***Organismal and Biodiversity Electives:***

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

<sup>e</sup> ***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
<b>First Year – Fall</b>			<b>First Year – Spring</b>		
IDFY 101	First Year Seminar*	3	IDCR 151	Created and Called for Community*	3
Varies	1 <sup>st</sup> language requirement*	3	Varies	2 <sup>nd</sup> 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 <sup>a</sup>	4	CHEM 106	General Chemistry II	4
		<b>TOTAL</b>			<b>TOTAL</b>
		<b>15</b>			<b>15</b>
<b>Sophomore – Fall</b>			<b>Sophomore – Spring</b>		
Varies	3 <sup>rd</sup> 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
		<b>TOTAL</b>			<b>TOTAL</b>
		<b>14-15</b>			<b>17</b>
<b>Junior – Fall</b>			<b>Junior – Spring</b>		
PHIL 10x	Philosophy*	3	Varies	1 <sup>st</sup> Social Science/History meeting QuEST*	3
PHYS 201	Introductory Physics I <sup>b</sup>	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 <sup>c</sup> <i>or</i> Selected Major Elective <sup>d</sup>	3-4	BIOL xxx <i>or</i> ENVS xxx	Organismal and Biodiversity Elective <sup>c</sup> <i>or</i> Selected Major Elective <sup>d</sup>	3-4
			Varies	Free Elective	3
		<b>TOTAL</b>			<b>TOTAL</b>
		<b>14-15</b>			<b>14-16</b>
<b>Senior – Fall</b>			<b>Senior – Spring</b>		
Varies	2 <sup>nd</sup> 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
SCIE 495 <i>or</i> Varies	Natural Sciences Capstone <i>or</i> Free Elective	3	SCIE 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 <sup>c</sup> <i>or</i> Selected Major Elective <sup>d</sup>	3-4	BIOL xxx <i>or</i> ENVS xxx	Organismal and Biodiversity Elective <sup>c</sup> <i>or</i> Selected Major Elective <sup>d</sup>	3-4
		<b>TOTAL</b>			<b>TOTAL</b>
		<b>15-16</b>			<b>14-16</b>

\*QuEST requirement

\*\* Alternate year course

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

<sup>a</sup> 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.

<sup>b</sup> Students may take PHYS 211 General Physics I or PHYS 202 Introductory Physics II in place of PHYS 201

<sup>c</sup> **Organismal and Biodiversity Electives:**

BIOL 348 Animal Behavior\*\*

BIOL 456 Ornithology\*\*

BIOL 458 Herpetology\*\*

<sup>d</sup> **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
<b>First Year – Fall</b>			<b>First Year – Spring</b>		
IDFY 101	First Year Seminar*	3	IDCR 151	Created and Called for Community*	3
Varies	1 <sup>st</sup> language requirement*	3	Varies	2 <sup>nd</sup> 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 <sup>a</sup>	4	CHEM 106	General Chemistry II	4
<b>TOTAL</b>		<b>15</b>	<b>TOTAL</b>		<b>15</b>
<b>Sophomore – Fall</b>			<b>Sophomore – Spring</b>		
Varies	3 <sup>rd</sup> 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
<b>TOTAL</b>		<b>14-15</b>	<b>TOTAL</b>		<b>14</b>
<b>Junior – Fall</b>			<b>Junior – Spring</b>		
BIBL 2xx	Knowledge of the Bible*	3	Varies	Non-Western Studies*	2-3
Varies	1 <sup>st</sup> Social Science/History meeting QuEST*	3	Varies	2 <sup>nd</sup> Social Science/History meeting QuEST*	3
Varies	Free Elective	3	Varies	Free Elective	3
PHYS 201	Introductory Physics I <sup>b</sup>	4	PHIL 10x	Philosophy*	3
BIOL xxx	Form and Function <sup>c</sup> <b>or</b> Plant Science <sup>d</sup> <b>or</b> Cellular and Molecular <sup>e</sup> <b>or</b> Selected Major Elective <sup>f</sup>	3-4	BIOL xxx	Form and Function <sup>c</sup> <b>or</b> Plant Science <sup>d</sup> <b>or</b> Cellular and Molecular <sup>e</sup> <b>or</b> Selected Major Elective <sup>f</sup>	3-4
<b>TOTAL</b>		<b>16-17</b>	<b>TOTAL</b>		<b>14-16</b>
<b>Senior – Fall</b>			<b>Senior – Spring</b>		
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 <sup>f</sup>	3-4
SCIE 495 <b>or</b> Varies	Natural Sciences Capstone <sup>b</sup> <b>or</b> Free Elective	3	SCIE 495 <b>or</b> Varies	Natural Sciences Capstone <sup>c</sup> <b>or</b> Free Elective	3
BIOL xxx	Form and Function <sup>c</sup> <b>or</b> Plant Science <sup>d</sup> <b>or</b> Cellular and Molecular <sup>e</sup> <b>or</b> Selected Major Elective <sup>f</sup>	3-4	BIOL xxx	Form and Function <sup>c</sup> <b>or</b> Plant Science <sup>d</sup> <b>or</b> Cellular and Molecular <sup>e</sup> <b>or</b> Selected Major Elective <sup>f</sup>	3-4
<b>TOTAL</b>		<b>15-16</b>	<b>TOTAL</b>		<b>15-1</b>

\*QuEST requirement

\*\* Alternate year course

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

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

<sup>a</sup> 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.

<sup>b</sup> Students may take PHYS 211 General Physics I or PHYS 202 Introductory Physics II in place of PHYS 201

<sup>c</sup> **Form and Function Electives:**

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

<sup>f</sup> **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

<sup>d</sup> ***Plant Science Electives:***

BIOL 332 Plant Taxonomy and Systematics\*\*

BIOL 325 Medicinal Botany\*\*

BIOL 336 Restoration Ecology\*\*

<sup>e</sup> ***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



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

**Notes:**

\* QuEST requirement

\*\* Alternate year course

<sup>a</sup> 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.

<sup>b</sup> 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.

<sup>c</sup> Students may take CHEM 204 in place of CHEM 309 and 310.

<sup>d</sup> Needed only if CHEM 204 taken in place of CHEM 309 and 310.

<sup>e</sup> Students may take PSYC 271 and a Mathematical Science meeting QuEST in place of STAT 269.

<sup>f</sup> Recommended. Philosophy is pre-requisite for SCIE 495 Natural Sciences Capstone.

<sup>g</sup> **Selected Major Electives:**

BIOL 265 Microbiology	BIOL 416 Cancer & Cell Biology**
BIOL 348 Animal Behavior**	BIOL 418 Immunology**
BIOL 375 Developmental Biology**	BIOL 460 Physiology
BIOL 380 Genomics and Disease**	BIOL 465 Gross Anatomy

## Environmental Science (B.S.) 8 Semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
<b>First Year – Fall</b>			<b>First Year – Spring</b>		
IDFY 101	First Year Seminar*	3	IDCR 151	Created and Called for Community*	3
Varies	1 <sup>st</sup> language requirement*	3	Varies	2 <sup>nd</sup> 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 <sup>a</sup>	4	CHEM 106	General Chemistry II	4
<b>TOTAL</b>		<b>15</b>	<b>TOTAL</b>		<b>15</b>
<b>Sophomore – Fall</b>			<b>Sophomore – Spring</b>		
Varies	3 <sup>rd</sup> 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			
<b>TOTAL</b>		<b>17</b>	<b>TOTAL</b>		<b>13-14</b>
<b>Junior – Fall</b>			<b>Junior – Spring</b>		
Varies	2 <sup>nd</sup> Social Science/History meeting QuEST*	3	Varies	1 <sup>st</sup> Social Science/History meeting QuEST*	3
ENVS 315	Environmental Ethics	3	ENGL 1xx	Literature meeting QuEST*	3
THEO 2xx	Christian Beliefs*	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 <sup>b</sup>	3-4	BIOL 336 <i>or</i> Varies	Restoration Ecology** <i>or</i> Selected Major Elective <sup>b</sup>	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
<b>TOTAL</b>		<b>14-15</b>	<b>TOTAL</b>		<b>15-18</b>
<b>Senior – Fall</b>			<b>Senior – Spring</b>		
Varies	Non-Western Studies*	2-3	Varies	Electives	4-6
ENVS 495	Environmental Science and Sustainability Capstone	3	BIOL 336 <i>or</i> Varies	Restoration Ecology** <i>or</i> Select Major Elective <sup>b</sup>	3-4
BIOL 332 <i>or</i> Varies	Plant Taxonomy and Systematics** <i>or</i> Select Major Elective <sup>b</sup>	3-4	GIS 245 <i>or</i> BIOL 4xx	Introduction to Geographic Information Sys. <i>or</i> Ornithology** <i>or</i> Herpetology**	3-4
ENVS 270 <i>or</i> ENVS 271	Environmental Techniques and Policy (Terrestrial <i>or</i> Water and Wetlands)**	2			
<b>TOTAL</b>		<b>13-15</b>	<b>TOTAL</b>		<b>12-14</b>

**Notes:**

\* QuEST requirement

\*\* Alternate year course

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

<sup>a</sup> 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.

**<sup>b</sup> Selected Major Electives:**

BIOL 265 Microbiology

BIOL 302 Rocky Mt. Ecosystems\*\*

BIOL 304 Tropical Biology\*\*†

BIOL 348 Animal Behavior\*\*

BIOL 456 Ornithology\*\*

BIOL 458 Herpetology\*\*

ENGR 353 Environmental Engineering

ENGR 451 Water & Wastewater Mmt\*\*

ENGR 453 Hazardous Water & Air Po\*\*

*Any Au Sable Institute courses approved for this major*

## Molecular Biology (B.S.) 8 Semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
<b>First Year – Fall</b>			<b>First Year – Spring</b>		
IDFY 101	First Year Seminar*	3	IDCR 151	Created and Called for Community*	3
Varies	1 <sup>st</sup> language requirement*	3	Varies	2 <sup>nd</sup> 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 <sup>a</sup>	4	CHEM 106	General Chemistry II	4
		<b>TOTAL</b>			<b>15</b>
<b>Sophomore – Fall</b>			<b>Sophomore – Spring</b>		
Varies	3 <sup>rd</sup> language or cross cultural* <sup>†</sup>	3	COMM 105	Oral Communication*	3
MATH 108/111	Calculus	3-4	Varies	1 <sup>st</sup> Social Science <sup>b</sup> /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
		<b>TOTAL</b>			<b>14-15</b>
<b>Junior – Fall</b>			<b>Junior – Spring</b>		
Varies	2 <sup>nd</sup> Social Science <sup>b</sup> /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 <sup>d</sup>	3-4	Varies	Selected Major Elective <sup>d</sup> <i>or</i> Free Elective	3-4
CHEM 410	Biochemistry I	4	PHIL 10x	Philosophy*	3
PHYS 201	Introductory Physics I <sup>c</sup>	4	Varies	Non-Western Studies*	2-3
			THEO 2xx	Christian Beliefs*	3
		<b>TOTAL</b>			<b>14-15</b>
<b>Senior – Fall</b>			<b>Senior – Spring</b>		
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	Varies	Selected Major Elective <sup>d</sup> <i>or</i> Free Elective	3-4
SCIE 495 <i>or</i> Varies	Natural Sciences Capstone <i>or</i> Free Elective	3	SCIE 495 <i>or</i> Varies	Natural Sciences Capstone <i>or</i> Free Elective	3
BIOL 375 <i>or</i> BIOL xxx	Developmental Biology <i>or</i> Selected Major Elective <sup>d</sup>	3-4	BIOL 380 <i>or</i> BIOL 416	Genomics and Disease** <i>or</i> Cancer and Cell Biology**	3-4
		<b>TOTAL</b>			<b>15-16</b>
<b>TOTAL</b>			<b>TOTAL</b>		
<b>15-16</b>			<b>15-17</b>		

**Notes:**

\* QuEST requirement

\*\* Alternate year course

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

<sup>a</sup> 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.

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

<sup>c</sup> Students may take PHYS 211 General Physics I or PHYS 202 Introductory Physics II in place of PHYS 201

**<sup>d</sup> Selected Major Electives:**

BIOL 265 Microbiology

BIOL 301 Health Care in the Developing World\*\*<sup>†</sup>

BIOL 325 Medicinal Botany\*\*

BIOL 418 Immunology\*\*

BIOL 460 Physiology

PSYC 323 Counseling Theories<sup>a</sup>

## Sustainability Studies (B.A.) with Conservation and Agriculture concentration 8-semester Plan

Course #	Course name	Credits	Course #	Course name	Credits
<b>First Year – Fall</b>			<b>First Year – Spring</b>		
IDFY 101	First year seminar*	3	IDCR 151	Created and Called for Community	3
COMM 105	Oral Communication*	3	Varies	2 <sup>nd</sup> language requirement*	3
Varies	1 <sup>st</sup> language requirement*	3	ENGL 1xx	Literature meeting QuEST*	3
Varies	Free Elective	3	Varies	Free Elective <sup>c</sup>	3
SUST 140	Ecology and Sustainability	3	BIOL 172	Diversity of Life and Plant Science	4
		<b>TOTAL</b>			<b>15</b>
			<b>TOTAL</b>		
			<b>16</b>		
<b>Sophomore – Fall</b>			<b>Sophomore – Spring</b>		
Varies	3 <sup>rd</sup> language requirement*+	3	Varies	Philosophy or Religion meeting QuEST*	3
BIBL 2xx	Knowledge of the Bible*	3	HIST xxx	History meeting QuEST*	3
CHEM 103	Chemical Science	4	WELL 1xx	Wellness*	1
ENVS 216	Environmental Issues & Sustainable Solutions	3	STAT 269 or Varies	Introductory Statistics* <sup>1</sup> or CIS/MATH meeting QuEST*	3-4
Varies	Sustainability elective <sup>i</sup>	3	SOAN 212	Cultural Anthropology	3
			Varies	Free Elective	3
		<b>TOTAL</b>			<b>16-17</b>
			<b>TOTAL</b>		
			<b>16-17</b>		
<b>Junior – Fall</b>			<b>Junior – Spring</b>		
ENVS 315	Environmental Ethics	3	GIS 245	Introduction to Geographic Information Syst	3
GEOL 201	Foundations of Geology	4	BIOL 336 or varies	Restoration Ecology** or Free Elective	3-4
INTE 391	Internship	3	BIOL xxx or Varies	Selected Organismal/Ecosystems elective <sup>c</sup> or Free Elective	3-4
Varies	Free elective	3	Varies	Free elective	3
ENVS 270 or ENVS 271 or Varies	Environmental Techniques and Policy (Terrestrial or Water and Wetlands)** or Free Elective	2-3	SOAN 310 or Varies	Food, Power, and Society** or Sustainability elective <sup>i</sup>	3-4
		<b>TOTAL</b>			<b>15-16</b>
			<b>TOTAL</b>		
			<b>15-17</b>		
<b>Senior – Fall</b>			<b>Senior – Spring</b>		
Varies	ART/MUSI/DANC/THEA meeting QuEST*	3	Varies	Free elective	3
THEO 2xx	Christian Beliefs*	3	BIOL 336 or varies	Restoration Ecology** or Free elective	3-4
Varies	Free elective	3	BIOL xxx or varies	Selected Organismal/Ecosystems elective <sup>c</sup> or Free elective	3-4
ENVS 270 or ENVS 271 or Varies	Environmental Techniques and Policy (Terrestrial or Water and Wetlands)** or Free Elective	2-3	SOAN 310 or Varies	Food, Power, and Society** or Sustainability elective <sup>1</sup>	3
SUST 495	Environ Sci and Sustainability Capstone	3			
		<b>TOTAL</b>			<b>14-15</b>
			<b>TOTAL</b>		
			<b>12-14</b>		

\*fulfills QuEST requirements

\*\* Alternate year course

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

<sup>1</sup> Sustainability Electives:

ECON 117 Issues in Environmental Economics

POLI 113 American Government

SOAN 315 Urban Sociology\*\*

STAT 269 Introductory Statistics<sup>a</sup>

Organismal and Biodiversity Electives<sup>c</sup>:

BIOL 302 Rocky Mountain Ecosystems\*\*

BIOL 304 Tropical Biology\*\*

BIOL 456 Ornithology\*\*

BIOL 458 Herpetology\*\*

Any of the Au Sable Institute (ASI) or Oregon Extension (OE) courses approved for this degree.

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