

**MAJOR: BIOLOGY, B.S.**

DEPARTMENT OF BIOLOGY

The B.S. in biology offers preparation for graduate school and a sound basis for professional training in the biological and health sciences. Biology is an unusually broad field, and students can tailor their programs to fit their own needs and interests. To provide flexibility in pursuing personal interests or career preparation, the student chooses 18 credits of upper division biology electives. The Department of Biology encourages students to develop as active scholars and to participate in undergraduate research.

TYPICAL PROGRAM OF STUDY			
FIRST YEAR			
FALL SEMESTER		SPRING SEMESTER	
BIOL 1011 General Biology I	5 cr	BIOL 1012 General Biology II	5 cr
CHEM 1151 General Chemistry I <sup>1</sup>	5 cr	CHEM 1152 General Chemistry II <sup>1</sup>	5 cr
COMP 1120 College Writing	<u>3 cr</u>	MATH 1290 Calculus for the Natural Sciences or MATH 1296 Calculus I <sup>2</sup>	<u>5 cr</u>
	Total: 13 cr		Total: 15 cr
SECOND YEAR			
BIOL 2801 Ecology	3 cr	BIOL 2101 Cell Biology	3 cr
BIOL 2802 Ecology lab	2 cr	CHEM 2522 Organic Chemistry II	4 cr
CHEM 2521 Organic Chemistry I	4 cr	Liberal Education Course or Minor Field Course	<u>8 cr</u>
MATH or STAT course <sup>3</sup>	<u>3-5 cr</u>		Total: 15 cr
	Total: 12-14 cr		
THIRD YEAR			
BIOL 2201 Genetics	3 cr	BIOL 4801 Evolution	2 cr
COMP 3150 Advanced Writing: Science	3 cr	BIOL elective <sup>5</sup>	3-4 cr
PHYS 1001 Introduction to Physics I <sup>4</sup>	5 cr	PHYS 1002 Introduction to Physics II <sup>4</sup>	5 cr
Liberal Education Course or Minor Field Course	<u>4-6 cr</u>	Liberal Education Course or Minor Field Course	<u>6 cr</u>
	Total: 15-17cr		Total: 16-17cr
FOURTH YEAR			
BIOL 3997 Seminar I	0.5 cr	BIOL 3998 Biology Seminar II	0.5 cr
BIOL elective <sup>5</sup>	3-4 cr	BIOL elective <sup>5</sup>	3-4 cr
BIOL elective <sup>5</sup>	3-4 cr	BIOL elective <sup>5</sup>	3-4 cr
BIOL elective <sup>5</sup>	3-4 cr	Liberal Education Course or Minor Field Course	<u>7-9 cr</u>
Liberal Education Course or Minor Field Course	<u>4-6 cr</u>		Total:13.5-17.5cr
	Total:13.5-18.5cr		

<sup>^</sup>First math course is determined by math placement exam. This schedule presupposes placement into Math 1296.

<sup>1</sup>CHEM 1161/1162 Honors General Chemistry I and II may substitute for CHEM 1151/1152

<sup>2</sup>MATH 1596 Honors Calculus I may be substituted for Math 1290 or 1296.

<sup>3</sup> Choose one course from: MATH 1297 Calculus II, STAT 2411 Statistical Methods, or STAT 3611 Probability & Statistics

<sup>4</sup> PHYS 1001/1002 may be replaced by PHYS 2011/2012, a calculus-based physics series that requires the completion of MATH 1297 Calculus II. MATH 1297 is required by some graduate and professional schools

<sup>5</sup> Students must complete 18 credits of biology electives 2XXX level or higher. Electives must include at least two lab courses or two courses with lab components. At least one course must be chosen from BIOL 3601, BIOL 3701, or BIOL 4501. Students may use 2 credits of SSP 3002. Two of the following may be used: MDBC 5501, MICB 5545, MICB 5555, PHSL 5601, or PHSL 5602.

FOR ADDITIONAL INFORMATION:

Department of Biology  
James I. Swenson Science Building 207  
726-6262 or 726-8811  
biol@d.umn.edu  
<http://www.d.umn.edu/biology>

## BIOLOGY, B.S.

MAJOR REQUIREMENTS	CREDITS	PREREQUISITES	SEMESTER TO BE COMPLETED	GRADE
<b>YEAR 1</b>				
BIOL 1011 General Biology I	5	1 yr of high school or 1 semester of college chemistry		
BIOL 1012 General Biology II	5	BIOL 1011		
CHEM 1151 General Chemistry I <sup>1</sup>	5	1 year HS chemistry; HS algebra		
CHEM 1152 General Chemistry II <sup>1</sup>	5	CHEM 1151		
COMP 1120 College Writing	3			
MATH 1290 Calculus for the Natural Sciences <sup>2</sup>	5	Math placement or Math 1250 with a grade of 'C-' or better		
or MATH 1296 Calculus I <sup>2</sup>	5	Math placement or Math 1250 with a grade of 'C-' or better		
<b>YEAR 2</b>				
BIOL 2101 Cell Biology	3	BIOL 1012; CHEM 1152		
BIOL 2801 Ecology	3	BIOL 1012		
BIOL 2802 Ecology lab	2	BIOL 2801 (concurrent registration OK)		
CHEM 2521 Organic Chemistry I	4	CHEM 1152 or 1162		
CHEM 2522 Organic Chemistry II	4	CHEM 2521		
MATH 1297 Calculus II <sup>3</sup>	5	MATH 1290, 1296 or 1596 with a grade of 'C-' or better		
or STAT 2411 Introduction to Statistics <sup>3</sup>	3	MATH 1250 or 1160		
or STAT 3611 Probability & Statistics <sup>3</sup>	4	MATH 1290, 1296 or 1596		
<b>YEAR 3</b>				
BIOL 2201 Genetics	3	BIOL 1012		
BIOL 4801 Evolution	2	BIOL 1012, 2201		
BIOL elective <sup>4</sup>	3-4			
PHYS 1001 Introduction to Physics I <sup>3</sup>	5	Algebra and trigonometry		
PHYS 1002 Introduction to Physics II <sup>3</sup>	5	Phys 1001		
COMP 3150 Advanced Writing: Science	3	Comp 1120; 60 credits		
<b>YEAR 4</b>				
BIOL 3997 Seminar I	0.5	60 credits		
BIOL 3998 Seminar II	0.5	BIOL 3997		
BIOL elective <sup>4</sup>	3-4			
BIOL elective <sup>4</sup>	3-4			
BIOL elective <sup>4</sup>	3-4			
BIOL elective <sup>4</sup>	3-4			
BIOL elective <sup>4</sup>	3-4			

<sup>^</sup>First math course is determined by math placement exam. This schedule presupposes placement into Math 1296.

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<sup>5</sup> Students must complete 18 credits of biology electives 2XXX level or higher. Electives must include at least two lab courses or two courses with lab components. At least one course must be chosen from BIOL 3601, BIOL 3701, or BIOL 4501. Students may use 2 credits of SSP 3002. Two of the following may be used: MDBC 5501, MICB 5545, MICB 5555, PHSL 5601, or PHSL 5602.

NOTE: In addition to the above requirements, students must complete the liberal education program and a minor (or a second major) to earn a B.S. degree. The Cell and Molecular Biology major may not be used to satisfy this requirement.