



**BIOLOGY MAJOR**

REQUIREMENT	SEMESTER COURSE	COMMENTS	<input checked="" type="checkbox"/>
Freshman Writing Requirement	Writ 1301 or 1401		<input type="checkbox"/>
Writing Intensive Requirement	4 Writing intensive courses; at least two must be 3xxx level or above including one in the major		<input type="checkbox"/>
<b>LIBERAL EDUCATION REQUIREMENTS:</b> Biological, Physical Sciences and Mathematical Thinking satisfied by major requirements.			
<b>History and Social Sciences</b> – at least 6 credits in the social sciences	Historical Perspective (at least 3 credits)		<input type="checkbox"/>
	Social Sciences		<input type="checkbox"/>
	Social Sciences		<input type="checkbox"/>
<b>Arts and Humanities</b> – at least 6 credits in the arts and humanities with one course from each group	Literature		<input type="checkbox"/>
	Other Humanities		<input type="checkbox"/>
<b>Designated Themes</b> – At least 3 credits in each area	Citizenship and Public Ethics		<input type="checkbox"/>
	Cultural Diversity		<input type="checkbox"/>
	Environment		<input type="checkbox"/>
	International Perspectives		<input type="checkbox"/>
<b>MAJOR REQUIREMENTS:</b>			
<b>Quantitative and Physical Sciences</b>			
Quantitative Requirement	Math 1271		<input type="checkbox"/>
	Math 1272 or Stat 3011 or CSci 1901 or CSci 3003		<input type="checkbox"/>
General Chemistry	Chem 1021		<input type="checkbox"/>
	Chem 1022		<input type="checkbox"/>
Organic Chemistry	Chem 2301		<input type="checkbox"/>
	Chem 2302		<input type="checkbox"/>
	Chem 2311 (Laboratory)		<input type="checkbox"/>
Physics: choose one track	Phys 1201W and Phys 1202W Phys 1301W and Phys 1302W <b>or</b>		<input type="checkbox"/>

<b>GENERAL AND ORGANISMAL BIOLOGY:</b>			
General Biology Plus <b>one</b> of the following:	Biol 2002 and 2003/2004		<input type="checkbox"/>
Animal Biology	Biol 2012; Biol 3211+Biol 2005, Phsl 3051+Biol 2005, Phsl 3061+Biol 2005		<input type="checkbox"/>
Plant Biology	Biol 2022 or Biol 3007W or Biol 3002 and 3005W		
Microbiology	VBS 2032 or MicB 3301		
<b>BIOLOGY CORE:</b>			
Biochemistry	BioC 3021 or BioC 4331		<input type="checkbox"/>
Ecology, Evolution, Animal Behavior ( <b>choose one</b> )	Ecology: Biol 3407/3408W/3807		<input type="checkbox"/>
	Evolution: Biol 3409		
	Animal Behavior: Biol 3411/3811		
Genetics	Biol 4003		<input type="checkbox"/>
Cell Biology	Biol 4004		<input type="checkbox"/>
<b>Major Electives:</b> Eleven additional upper division credits in mathematics, physical, biological and/or computer science; including two lab/field courses. (See list on opposite page)	Lab/Field		<input type="checkbox"/>
	Lab/Field		<input type="checkbox"/>
<b>Additional electives to reach 120 credits for the degree</b>	All students need 120 credits to graduate, so additional credits may be needed. Many students have room for electives such as languages, prerequisites for professional school programs and graduate school, additional courses in the major, more research, courses that apply toward double majors or minors, or courses for personal enrichment.		<input type="checkbox"/>

**BIOLOGY MAJOR CHECKLIST 4.15.09**

\*\*Students can only use credit from one of Biol 3211, PHSL 3051, or PHSL 3061 toward major requirements.

**Lab/Field Courses:** "ITASCA" courses are offered summer sessions at the Lake Itasca Forestry and Biological Station. Check the Itasca program website for current summer offerings. Course used to complete this requirement cannot be used to meet other major requirements.

<u>Course Number</u>	<u>Course Name</u>	<u>Course offered</u>
4994/4794W*	Directed Research (minimum 3 cr) under BIOL, BIOC, EEB, GCD, MICB, NSCI, or PBIO	all terms
BioC 4025	Laboratory in Biochemistry (2cr)	f,s
BioC 4125	Laboratory in Molecular Biology and Biotech (3 cr)	s, May session
Biol 3211 + 2005**	Animal Physiology and Animal Diversity Lab (4 cr)	f, s, summer
Biol 3002 + 3005W	Plant Biology: Function Lecture and Lab (4 cr)	s
Biol 3007W	Plant Biology: Diversity and Adaptation (4 cr)	f
Biol 3807	ITASCA - Ecology (4 cr)	summer
Biol 3811	ITASCA - Introduction to Animal Behavior (4 cr)	summer
Biol 3820	ITASCA - Aquatic Toxicology (2 cr)	summer
Biol 3825	ITASCA - Ecological Genetics (2 cr)	summer
Biol 4850	ITASCA - Special Topics in Biology (2-5 cr)	summer
Biol 4862	ITASCA - Biological Photography & Digital Image Tech. (3 cr)	summer
Biol 4894	ITASCA - Directed Research at Itasca (minimum 3 cr)	summer
EEB 4014	Ecology of Vegetation (3 cr)	f
EEB 4016W	Ecological Biogeography (3 cr)	s
EEB 4129	Mammalogy (4 cr)	f
EEB 4134	Introduction to Ornithology (4 cr)	s
EEB 4801	ITASCA - Field Limnology (4 cr)	summer
EEB 4809	ITASCA - Field Ecosystem Ecology (3 cr)	summer
EEB 4814	ITASCA - Plant Community Ecology (4 cr)	summer
EEB 4817	ITASCA - Vertebrate Ecology (4 cr)	summer odd yrs
EEB 4825	ITASCA - Telemetry and Animal Behavior (2 cr)	summer
EEB 4839	ITASCA - Field Studies in Mammalogy (4 cr)	summer
EEB 4842	Arctic Field Ecology (4 cr)	summer
EEB 4844	ITASCA - Field Ornithology (4 cr)	summer
ENT 4861	ITASCA - Aquatic Insects (4 cr)	summer
FW 3136	Biology of Fishes (3 cr)	f
EEB 4607	Plankton Ecology (4 cr)	s
EEB 5605	Limnology Lab (2 cr)	f
GCD 4015	Genetics Lab (2 cr)	f,s
GCD 4025	Cell Biology Lab (2 cr)	f,s
GCD 4111	Histology (4 cr)	s
MicB 3301	Biology of Microorganisms (5 cr)	f,s
MicB 4215	Microbial Physiology and Diversity (3 cr)	f
MicB 4235	Virology, Immunology and Microbial Genetics (3 cr)	s
PBio 4321	Taxonomy of Minnesota Flora (3 cr)	f, even years
PBio 4511	Flowering Plant Systematics (3 cr)	s, even years
PBio 5416	Plant Morphology, Development, and Evolution (4 cr)	rarely offered
Phsl 3051 + Biol 2005**	Human Physiology and Animal Diversity Lab (5 cr)	f,s
Phsl 3061 + Biol 2005**	Principles of Physiology and Animal Diversity Lab (5cr)	f,s

\* Directed research must be completed for a minimum of 3 credits to count for a lab/field requirement; credits can be split over multiple terms using 4994, 4794W, or a combination of the two. Directed research can only be used for one laboratory or field requirement. A maximum of 6 credits of 4794W/4994 can count toward the 11 upper division elective credits.

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\*\*\* Course offerings are subject to change

<http://www.cbs.umn.edu/studentservices/majors.html>