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Planning Sheet: BACHELOR OF SCIENCE in BIOLOGY

(Effective Fall 2012. This major consists of 17 courses)

Biology Major Requirements

Term	Grade	Course #	Lib. Arts	Title
_____	_____	BIO 151	NSM-L	Introductory Biology (Prereq: MPG 3)
_____	_____	BIO 152	NSM-L	Evolution, Ecology, and Diversity (Prereq: BIO 151)
_____	_____	BIO 253		Introductory Cellular Biology (Prereq: CHM 116 and sophomore status)

Select and complete one (1) of the following two (2) courses:

_____	_____	BIO 361	<input type="checkbox"/>	Plant Biology (Prereq: BIO 151, BIO 152, & ENL 111 or 112 or HON 111)
_____	_____	BIO 481	<input type="checkbox"/>	Ecology (Prereq: BIO 253 & MAT 114 or 145 or 163 or 248 or PSY 215)

Biology Electives: Select and complete five (5) upper division Biology electives.

_____	_____	BIO _____	_____	Biology Elective: _____
_____	_____	BIO _____	_____	Biology Elective: _____
_____	_____	BIO _____	_____	Biology Elective: _____
_____	_____	BIO _____	_____	Biology Elective: _____
_____	_____	BIO _____	_____	Biology Elective: _____

Non-Departmental Supporting Requirements:

Chemistry Requirements

_____	_____	CHM 115	NSM-L	General Chemistry I (Prereq: MPG 3; high school chemistry recommended)
_____	_____	CHM 116	NSM-L	General Chemistry II (Prereq: CHM 115)

Organic Chemistry

_____	_____	CHM 351		Organic Chemistry I (Prereq: CHM 116)
_____	_____	CHM 352		Organic Chemistry II (Prereq: CHM 351)

Physics Requirements

_____	_____	PHY 121	NSM-L	General Physics I (Prereq: MAT 145 or concurrent registration)
_____	_____	PHY 122	NSM-L	General Physics II (Prereq: PHY 121, & MAT 146 or concurrent registration, and ENL 111 or 112 or HON 111)

Mathematics Requirements

_____	_____	MAT 145	NSM	Calculus I (Prereq: MPG 4)
_____	_____	MAT 146	NSM	Calculus II (Prereq: MAT 145)

NOTES :

■ Grade and GPA requirements:

- Grade and GPA requirements for courses with a prerequisite of BIO 253: GPA of 2.0 in BIO 151, 152, & 153 and minimum grade of 1.0 in each of these courses.
- Grade and GPA requirements for courses with prerequisite of BIO 151 & 152: GPA of 2.0 in BIO 151 & 152 and minimum grade of 1.0 in each of these courses.
- A grade of 2.0 or above is required for all supporting courses and upper division biology courses applied to the major.
- Upper division biology courses must be traditionally graded when used to satisfy a major requirement.

■ A student completing BIO 151, 152, 253, and at least two upper division electives may, in consultation with their advisor, seek approval from the department to complete major requirements with as many as 4 upper division courses from other institutions.

■ **B.S. Waiver:** Student completing the B.S. in Biology may waive two Liberal Arts Foundation courses (in two different areas), or waive the two-course Modern Language requirement.

■ **Keystone:** BIO 490: Biology Keystone (.5 credit) or SCI 490: Integrated Science (.5 credit) is required. Double majors and students in the Honors program should consult with their BIO faculty advisor regarding the keystone requirement.

■ **Abbreviation Key:** ML = Modern Language; SC = Signature Curriculum; EM = Engaging Minneapolis; AE = Augsburg Experience; KC = Senior Keystone Course; NSM = Natural Science & Mathematics - no lab; NSM-L = Natural Science & Mathematics-with lab; SBS = Social & Behavioral Science; FA = Fine Arts; HUM = Humanities

See back for information on graduation skills requirements

Planning Sheet: GRADUATION SKILLS REQUIREMENTS

These requirements were implemented for Fall 2008. Please talk with your faculty advisor for information.

Graduation skills, including the Quantitative Reasoning requirements, are completed as follows. Graduation skills in Critical Thinking, Writing, Speaking, and Quantitative Reasoning are required for graduation. Critical Thinking is embedded in all majors. Plans for completion of other graduation skills are determined by the major department. Consult your department chair or faculty advisor to select appropriate courses to meet the Quantitative Reasoning (QR) graduation skill. QR is satisfied by completing one (1) Quantitative Foundational course (QF) and one (1) Quantitative Application course (QA), or one (1) combined QFA course. The most current information on Graduation Skills can be found in the Augsburg College catalog at www.augsburg.edu/catalog/.

Transfer students must consult an advisor about potential adjustments to their course requirements to fulfill each graduation skill.

Designated Major Course	GRADUATION SKILLS – Biology B.S.		Completed
Embedded in major	Writing Requirements TWO (2) Writing courses		
Embedded in major			
COM 115*	Speaking One (1) Speaking course		
Designated Major Course	QUANTITATIVE REASONING		Completed
Embedded in major	Quantitative Foundations & Applications One (1) QFA course (Prereq: MPG3)	QFA course	
– OR –			
Embedded in major	Quantitative Foundations and Quantitative Applications One (1) QF course (Prereq: MPG 3) and one (1) QA course		QF course
Embedded in major			QA course

* COM 111 is also accepted to fulfill the Speaking Graduation Skill

Graduation Tally Checklist

These requirements were implemented in April 2003 and remain in effect until further notice.

Requirement	Progress Towards Completion	
Cumulative Course Credits <ul style="list-style-type: none"> ▪ Minimum number of course credits needed for graduation = 32 ▪ At least 8 credits completed at Augsburg. ▪ 6 of last 8 credits completed in residence. ▪ Second degree – minimum of 8 credits completed in residence. 	Transfer Credits Earned	
	+ Aug. Credits Earned	
	= Total Credits Earned	
	# Credits Needed	

Grade Point Average (GPA) <ul style="list-style-type: none"> ▪ Minimum 2.0 GPA required in major, minor, & overall. ▪ Some majors require higher GPA. ▪ Latin Honors GPA requirements: <ul style="list-style-type: none"> ○ Summa cum laude: 3.9-4.0 ○ Magna cum laude: 3.80-3.89 ○ Cum laude: 3.60-3.79 	Cumulative GPA	
	Major 1 GPA	
	Major 2 GPA	
	Minor GPA	

Other Limits	Minimum/Maximum	Your Total
Overall maximum courses graded Pass/No Pass (P/N) <ul style="list-style-type: none"> ▪ Grade of 2.0 or above required to Pass and earn credit for course. ▪ Maximum of 2 of 6 credits P/N may be in major. 	Maximum of 6	
Major Courses graded Pass/No Pass (P/N)	Maximum of 2	
Latin Honors courses graded Pass/No Pass (P/N)	Maximum of 2	
Latin Honors traditionally graded courses	Minimum of 14	
Internships	Maximum of 4	
Independent/Directed Studies	Maximum of 2	

Sample Four-Year Plan (B.S.)

This is a possible plan for the Bachelor of Science in Biology, though there are many configurations of courses. Students should limit lab courses to two per term. In general, students should try to complete math earlier in the curriculum, and physics during the junior or senior years. Liberal Arts Foundation (LAF), Modern Language and other Core courses are more flexible. **NOTE: Students completing the B.S. curriculum may waive two Liberal Arts Foundation courses (in two different areas), or waive the two-course Modern Language requirement.**

Freshman Year

Fall Term (4)

BIO 151
CHM 115
MAT 145
REL 100
AugSem

Spring (4)

BIO 152
CHM 116
MAT 146
ENL 111

Sophomore Year

Fall Term (4)

BIO 253
CHM 351
Modern Language
COM 115

Spring (4)

Upper-Division BIO elective
CHM 352
Modern Language
REL 200

Junior Year

Fall Term (4)

PHY 121
Upper-Division BIO elective
LAF Course
Minor or Elective
HPE 001

Spring (4)

PHY 122
Upper-Division BIO elective
LAF Course
Minor or Elective

Senior Year

Fall Term (4)

Upper-Division BIO elective
Upper-Division BIO elective
LAF Course
Minor or Elective
HPE skill

Spring (4.5)

Upper-Division BIO elective
Keystone: BIO 490 (.5 credit)
Minor or Elective
Minor or Elective
Minor or Elective

Notes:

- COM 115 or COM 111 fulfills both the speaking skill and a Humanities Liberal Arts Foundation requirement.

Biology Department

The Biology Department is located in Science Hall 224. You may contact the following faculty for more information on the major requirements, and also check out the website at www.augsburg.edu/biology.

Dale C. Pederson, Dept Chair
Associate Professor
Phone: 612-330-1073
Email: pederson@augsborg.edu

Matthew Beckman
Assistant Professor
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Assistant Professor
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Ralph J. Butkowski
Assistant Professor
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David Crowe
Assistant Professor
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Email: crowe@augsborg.edu

What can I do with a Biology major?

The following jobs are some of the positions that Biology majors could pursue. Many require professional or graduate school.

For more information on possible careers in biology, please talk with your faculty adviser, and also the Center for Service, Work and Learning.

Agronomist
Botanist
Cell Biologist
Chiropractor
Conservationist
Dentist
Environmental Scientist
Environmental Lawyer
Field Biologist
Field Ecologist
Fish and Wildlife Officer
Forestry
Geneticist
Health Inspector
Horticulturalist
Naturalist
Nutritionist
Optometrist
Pharmacologist
Physical Therapist
Physician
Public Health
Researcher
Resource Management
Taxonomist
Veterinarian

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