

BIOLOGY MAJOR (A)

The goal of the Department of Life & Earth Sciences at Concordia University is to develop competent scientists with a Christian worldview. The graduates of its programs will possess the current scientific knowledge and research/data interpretation skills so necessary for entering scientific or medical careers in industry, academia, or government. More importantly, they will be prepared to provide a Christian influence and ethical perspective to the debate on the science-related problems facing the world today.

The Biology major provides a traditional background for students interested in careers in the biological sciences whether it be in industry, government, or academia, with the opportunity for students to identify and focus on areas of biology that are of specific interest. This major includes a broader focus (including more plants and animals) than the Biomedical Sciences Major, but still provides the foundational knowledge for most post-doctoral programs in a medical field. Accordingly, this major is commonly selected by students interested in pre-health professional education.

The Lutheran Church–Missouri Synod affirms that all of Scripture, including the creation account in Genesis, is the word of God, true, and authoritative for faith and life. Current conventional scientific theories that conflict with the account in Genesis might be studied in portions of this course. In no way should this be seen as endorsement of a non-authoritative view of Scripture by the course instructor or by Concordia University.

Program Learning Outcomes

Students will:

- Demonstrate an understanding of and an ability to explain major biological and related scientific concepts (Knowledge Base of Biology and Related Sciences);
- Demonstrate the ability to appropriately collect and analyze data while utilizing laboratory equipment and procedures safely and effectively (Biological Procedures and Data)
- Develop investigative and critical thinking skills to explore complex questions and solve challenging scientific problems (Scientific Inquiry);
- Demonstrate the ability to communicate scientific information effectively to both scientists and non-scientists (Scientific Communication);
- Recognize how vocations in science provide opportunities for service to Christ and others and necessitate ethical behavior in all aspects of science (Vocation and Ethics)
- Demonstrate an understanding of how/why a Christian sees evidence of God's design in nature and how to be good stewards of His creation (God's Design and Stewardship).

Curriculum

Code	Title	Hours
Core Requirements (https://catalog.cuw.edu/undergraduate/university/acad-prog/trad/core/)		45
Major Requirements		56
Electives		19
Minor: Optional		
Total Hours		120

Code	Title	Hours
Required Core Courses		
CHEM 1414	General Chemistry I (Natural World: Lab Science)	
COMM 1100	Public Speaking (Recommended) (Communication)	
	or COMM 2100 Interpersonal Communication	
MATH 2050	Statistics I (Natural World: Mathematics)	
PHIL 3500	Bioethical Dilemmas in Contemporary Society (Human Beings and Being Human)	
	or SCI 2400 Cosmogony	
Recommended Core Courses		
PSY 1010	General Psychology	
BIO 3760	Ecology of the Tropics (Core Culture Designation)	
Required Major Courses		
BIO 1501	Functional Human Biology I	4
BIO 1502	Functional Human Biology II	4
BIO 2400	Botany	4
BIO 2500	Zoology	4
BIO 2600	Biology of Microorganisms	4
BIO 3400	Genetics	4
BIO 4900	Biology Senior Seminar (1 credit course taken twice)	2
CHEM 1414	General Chemistry I (taken in core)	
CHEM 1424	General Chemistry II	4
CHEM 2414	Organic Chemistry I	4
CHEM 2424	Organic Chemistry II	4
PHYS 1514	General Physics I	4
PHYS 1524	General Physics II	4
Major Electives		
<i>Choose a minimum of 10 credits of the following:</i> ¹		10
BIO 1801	Human Anatomy and Physiology I	4
BIO 1802	Human Anatomy and Physiology II	4
BIO 2800	Pathophysiology	3
BIO 3200	Cell Biology	4
BIO 3500	Immunology	3
BIO 3760	Ecology of the Tropics (Core Culture Designation)	3
BIO 3761	Ecology of the Tropics Lab	1
BIO 3990	Biology Internship ²	1-4
BIO 4100	Ecology	4
BIO 4300	Pharmacology	3
BIO 4800	Human Physiology	4
BIO 4990	Undergraduate Research ²	1-4
CHEM 3214	Biochemistry	4
CHEM 3990	Chemistry Internship ²	1-4
CHEM 4990	Undergraduate Research ²	1-4
ENV 1800	Environmental Science	4
SCI 2400	Cosmogony (if not taken in the core)	3
Total Hours		56

¹ With approval from the Life and Earth Sciences Department on an individual basis, a student may use a 4 credit upper-level chemistry course in place of one of the courses listed here.

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² No more than 4 credits of BIO 3990, BIO 4990, CHEM 3990, and/or CHEM 4990 may count towards major requirements.