

BACHELOR OF SCIENCE / BACHELOR OF ARTS IN BIOLOGY

OVERVIEW

The Department of Biology offers a broad-based curriculum that prepares majors for a variety of careers in the biological and health sciences. Majors will have a strong background in the concepts of modern biology from the level of the molecule to the ecosystem. This background is further strengthened by courses in chemistry, physics and mathematics. Because of the diversity of goals of biology majors, both the Bachelor of Arts and the Bachelor of Science degrees are offered. The B.A. is recommended primarily for students who plan to enter fields where graduate work in biology will be not be required. The B.S. degree is recommended for students who intend to pursue graduate study in biology.

STUDENT HONOR SOCIETY

Biology majors at Lewis have formed a student chapter of the national honor society, Tri Beta. The Lewis chapter, Omega Omicron, is actively involved in the pursuit of educational and community projects designed to promote the field of biology. Students have participated in food drives for Ronald McDonald House, a fundraising walk for Cystic Fibrosis, a prairie restoration project at the Midewin Tallgrass Prairie, and have brought numerous guest lectures to campus. In addition, students also participate in the care of a number of wildlife who are owned by the department.

HIGHLIGHTS

This major offers the student a cutting edge, career-oriented education. Our small class sizes and personalized approach to education give Lewis students both the theoretical framework and “hands-on” experience to excel in the clinical, industrial, and other professional settings. Students will learn good scientific technique in their laboratory classes.

CAREER OPPORTUNITIES

Biology majors can choose from a diverse variety of career paths, ranging from professions dealing with plant and animal life to humans. Many graduates of the Lewis program have gone on to become high school science teachers, pharmaceutical representatives, or continued study in one of the many medical specialty professions.

Below is a listing of some of the career options a Biology major can choose from:

- Bioengineer
- Botanist
- Dietician
- Environmental engineer
- Food scientist
- Industrial hygienist
- Medical laboratory technologist
- Microbiologist
- Paramedic
- Pharmaceutical representative
- Public health research associate
- Science teacher
- Wildlife biologist

Career Planning Web Sites and Resources:
www.sciencejobs.com

CONTACT

Lewis University
Office of Admission, Unit 297
One University Parkway
Romeoville, IL 60446-2200
(815) 836-5250
admissions@lewisu.edu



A Catholic and Lasallian University

BACHELOR OF SCIENCE / BIOLOGY

Total Credit Hours: 128
 Major Credit Hours: 79-81

A grade of C or better must be earned in a prerequisite course in order to advance to the next course in the sequence.

Diagnostic Medical Sonography majors may take a Biology class only two times. If a student has not achieved a minimum of a C after the second attempt, the student may not repeat the class.

The Biology Department will award 3 hours of credit for our general education class 02-100 (Introduction to Biology) when students have received a score of 4 or 5 on AP tests. We do not award any credit for major classes based on AP scores.

I. Core Courses (62)

02-110 General Biology I (4) and 02-111 Lab (1)
 02-115 General Biology II (4) and 02-116 Lab (1)
 02-220 Genetics (4) and 02-221 Lab (1)
 02-224 Microbiology (3) and 02-226 Lab (2)
 02-305 Molecular Cell Biology (4) and 02-306 Lab (1)
 02-315 General Ecology (3) and 02-316 Lab (1)
 02-355 Molecular Biochemistry (3) and 02-356 Lab (1)
 03-110 General Chemistry I (4) and 03-111 Lab (1)
 03-115 General Chemistry II (4) and 03-116 Lab (1)
 03-220 Organic Chemistry I (4) and 03-221 Lab (1)
 03-225 Organic Chemistry II (4) and 03-226 Lab (1)
 02-320 Biometry (3)
 02-496 Research Methods (2)
 13-200 Calculus I (4)

II. Select one of the Physics sequence (10)

17-200 College Physics I (4) and 17-201 Lab (1)
 17-205 College Physics II (4) and 17-206 Lab (1)
 OR
 17-210 General Physics I (4) and 17-211 Lab (1)
 17-215 General Physics II (4) and 17-216 Lab (1)

III. Select two of the following options (6-8)

02-335 Advanced Human Anatomy and Physiology (3)
 AND
 02-336 Case Studies in Advanced Human Anatomy and Physiology (1)
 02-357 Nutritional Biochemistry (3) and 02-358 Lab (1)
 02-425 Medical Microbiology (3)
 02-426 Immunology (3)
 02-435 Ethics: Scientific Principles and Practices (3)
 02-497 Special Topics (2)
 02-498 Field Biology (3)

III. The advanced writing requirement of the General Education curriculum is satisfied by successful completion of the following courses which contain strong writing components: General Biology Labs I and II (02-111 and 02-116), Microbiology Lab (02-226), Molecular Cell Biology Lab (02-306), and Research Methods (02-496).

IV. Select one of the following options (1)

02-380 Biochemistry Journal Club (1)
 02-381 Physiology Journal Club (1)
 02-382 Microbiology Journal Club (1)
 02-383 Ecology Journal Club (1)
 02-384 Genetics Journal Club (1)

BACHELOR OF ARTS / BIOLOGY

Total Credit Hours: 128
 Major Credit Hours: 53

I. Core Courses (53)

- 02-110 General Biology I (4) and 02-111 Lab (1)
- 02-115 General Biology II (4) and 02-116 Lab (1)
- 02-220 Genetics (4) and 02-221 Lab (1)
- 02-224 Microbiology (4) and 02-226 Lab (1)
- 02-305 Molecular Cell Biology (4) and 02-306 Lab (1)
- 02-315 General Ecology (3) and 02-316 Lab (1)
- 02-355 Molecular Biochemistry (3) and 02-356 Lab (1)
- 03-110 General Chemistry I (4) and 03-111 Lab (1)
- 03-115 General Chemistry II (4) and 03-116 Lab II (1)
- 03-220 Organic Chemistry I (4) and 03-221 Lab (1)
- 03-225 Organic Chemistry II (4) and 03-226 Lab II (1)

II. Although not specifically required for the major, the following courses are strongly recommended for the B.A. degree if the student intends to pursue a graduate degree:

- 13-200 Calculus I (4)
- 17-200 College Physics I (4) and 17-201 Lab (1)
- 17-210 General Physics I (4) and 17-211 Lab (1)

III. The advanced writing requirement of the General Education curriculum is satisfied by successful completion of the following courses which contain strong writing components: General Biology Labs I and II (02-111 and 02-116), Microbiology Lab (02-226), and Molecular Cell Biology Lab (02-306).

MINOR / BIOLOGY

Minor Credit Hours: 35

I. Core Courses (35)

- 02-110 General Biology I (4) and 02-111 Lab I (1)
- 02-115 General Biology II (4) and 02-116 Lab (1)
- 02-220 Genetics (4) and 02-221 Lab (1)
- 02-224 Microbiology (4) and 02-226 Lab (1)
- 03-110 General Chemistry I (4) and 03-111 Lab (1)
- 03-115 General Chemistry II (4) and 03-116 Lab (1)
- 03-220 Organic Chemistry I (4) and 03-221 Lab (1)

HIGH SCHOOL TEACHING CERTIFICATE (GRADES 6-12)

The Department of Biology has a fully approved teacher education program which prepares candidates to teach in grades 6-12 in the Illinois Public Schools. The program is approved by the State Teacher Certification Board in conjunction with the Illinois State Board of Education and by NCATE, a national accrediting organization.

The requirements for this program are the core courses for the Biology major with the appropriate support courses for the B.A. or the B.S. degree in Biology. Students selecting the B.A. degree must take Botany, Research Methods, two (2) semesters of Physics, Fundamentals of Earth Science (02-144), and Fundamentals of Space Science (17-140). Students who wish to seek high school certification should consult the Secondary Education advisor in the Dept. of Biology, Dr. Valerie Vander Vliet, by e-mail vanderva@lewisu.edu, through campus mail at Unit 250, or by telephone at (815) 836-5215.

PARADIGM FOR B.S. IN BIOLOGY

*Freshman Year***First Semester**

General Biology I (4) and Lab (1)
 General Chemistry I (4) and Lab (1)
 Calculus I (4)

Second Semester

General Biology II (4) and Lab (1)
 General Chemistry II (4) and Lab (1)

*Sophomore Year***First Semester**

Genetics (4) and Lab (1)
 Organic Chemistry I (4) and Lab (1)

Second Semester

Microbiology (4) and Lab (1)
 Organic Chemistry II (4) and Lab (1)

*Junior Year***First Semester**

Biochemistry I (3) and Lab (1)
 College Physics I (4) and Lab (1)

Second Semester

Biology Elective
 College Physics II (4) and Lab (1)

*Senior Year***First Semester**

Biometry (3)
 General Ecology (3) and Lab (1)
 Research Methods (2) - fall or spring

Second Semester

Molecular Cell Biology (4) and Lab (1)
 Biology Elective
 Biology Elective

Biology Electives Include:

Biochemistry II: Biochemistry of Nutrition (02-357) and Lab (02-358); Invertebrate Zoology (02-405); Advanced Human Anatomy and Physiology (02-335); Case Studies in Human Physiology (02-336); Medical Microbiology (02-425); Immunology (02-426); Scientific Ethics (02-435); Botany (02-420) and Lab (02-422), and Special Topics (02-497).

**In the event that FOUR (4) YEARS of high school mathematics were NOT taken (including pre-calculus), Math Analysis (13-120) must be taken concurrently with General Chemistry I (03-110). Similarly, if testing indicates the need to enroll in The Sentence and the Paragraph (06-102), or The Essay (06-103), this class must be taken during the first semester.*

PARADIGM FOR B.A. IN BIOLOGY

*Freshman Year***First Semester**

General Biology I (4) and Lab (1)
 General Chemistry I (4) and Lab (1)

Second Semester

General Biology II (4) and Lab (1)
 General Chemistry II (4) and Lab (1)

*Sophomore Year***First Semester**

Genetics (4) and Lab (1)
 Organic Chemistry I (4) and Lab (1)

Second Semester

Microbiology (4) and Lab (1)
 Organic Chemistry II (4) and Lab (1)

*Junior Year***First Semester**

Biology Elective

Second Semester

Molecular Cell Biology (4) and Lab (1)

*Senior Year***First Semester**

General Ecology (3) and Lab (1)

Second Semester

Biology Elective

Biology Electives: SAME as Bachelor of Science

**In the event that FOUR (4) YEARS of high school mathematics were NOT taken (including pre-calculus), Math Analysis (13-120) must be taken concurrently with General Chemistry I (03-110). Similarly, if testing indicates the need to enroll in The Sentence and the Paragraph (06-102), or The Essay (06-103), this class must be taken during the first semester.*