

## B. A. in BIOLOGY

(32 credits required for graduation with a minimum cumulative GPA of 2.00)

**NOTE:** This guide is not meant to replace the degree audit; it is subject to change and represents actions approved by Faculty to date. Students are encouraged to run their degree audit at the end of each term of enrollment. Please refer often to the *2019-2020 Online Catalog & Student Handbook* <http://catalog.berea.edu/en/current/catalog>, which will be updated with the most current information.

### GENERAL EDUCATION PROGRAM

*No single transfer course can meet more than one General Education requirement.*

#### Core Courses

*(Developmental math courses may be waived on basis of test scores.)*

MAT 010 Pre-Algebra  
MAT 011 Elementary Algebra  
MAT 012 Elementary Algebra II

GSTR 110 Writing Seminar I: Critical Thinking in the Liberal Arts *(Transfer students may waive if College Composition was taken as a degree-seeking student at another college and earned a grade of B or higher.)*

GSTR 210 Writing Seminar II: Identity and Diversity in the U.S.

GSTR 310 Understandings of Christianity

GSTR 410 Seminar-Contemporary Global Issues

#### Scientific Knowledge and Inquiry

GSTR 332 Scientific Origins **OR**

Two (2) approved science courses, from two different disciplines, one of which must be an approved lab course.

The following courses have been approved to meet this requirement: ANR 110, BIO 100, 101, 110, CHM 113, 131, PHY 111, 127, 221

#### Wellness & Fitness

WELL 101 Principles of Wellness I

WELL 102 Principles of Wellness II

Two (2) ¼-credit HHP activity courses *(HHP 200 will satisfy both the SWIM requirement and one of the activity course requirements)*

#### Practical Reasoning (PR & PRQ)

Two (2) courses, at least one firmly grounded in math or statistics (PRQ); the other can be an approved practical reasoning (PR) course or another PRQ course.

#### Perspectives (Six areas required)

One (1) course in each of the six areas is required. Individual courses may be approved to satisfy more than one perspective, but no single course may satisfy more than two perspective areas.

- 1) Arts
- 2) Social Science
- 3) Western History
- 4) Religion
- 5) African American/Appalachian/Women
- 6) International (choose one option):

A) Two (2) courses in the same non-English language, one of which may be waived through testing; **OR**

B) Two (2) world culture courses, one of which must be grounded in a non-western culture

#### Active Learning Experience

An approved experience, taken for credit or non-credit (e.g. internships, undergraduate research experiences).

### MAJOR REQUIREMENTS

*A minimum GPA of 2.0 in the major is required for graduation. For admission to the Major, a minimum combined GPA of 2.37 must be earned BIO 110, 113, and 114; this is not a graduation requirement.*

#### Core Courses (Five total credits)

BIO 110 Modern Biology  
BIO 113 Experimental Zoology  
BIO 114 Botany  
BIO 330: Genetics

#### Field Course (One course from list)

BIO 310 Ecology  
BIO 324 Parasitology  
BIO 327 Herpetology  
BIO 332 Mammalogy  
BIO 342 Field Botany  
BIO 344 Dendrology & Forest Ecology  
SENS 226 Coral Reef Ecosystems  
Approved special topics courses

#### Capstone Course

BIO 494 Evolution

#### Required Distribution Courses (Four total credits)

*(At least two must be Biology courses. No more than two transfer courses may be used for this requirement.)*

BIO 207 Pathophysiology Altered States  
BIO 220 Comparative Vertebrate Anatomy  
BIO 222 Microbiology  
BIO 306 Histology & Histotechnology  
BIO 310 Ecology  
BIO 323 Principles of Physiology  
BIO 324 Parasitology  
BIO 325 Neurobiology  
BIO 327 Herpetology  
BIO 331 Developmental Biology  
BIO 332 Mammalogy  
BIO 342 Field Botany  
BIO 344 Dendrology & Forest Ecology  
BIO 441 Cellular & Molecular Biology  
BIO Special Topics  
ANR 310 Nutritional Studies  
CHM 340 Biochemistry I **OR**  
CHM 345 Intro to Biochemistry  
CHM 440 Biochemistry II  
CFS 221 Nutrition  
ECO 250 Applied Statistics  
PHY 340 Biophysics  
PSY 212 Behavioral Neuroscience  
SENS 226 Coral Reef Ecosystems

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**Required Collateral Courses** (Count outside the major)  
(Students interested in the biomedical sciences, especially pre-med, pre-dental, and students pursuing the Molecular, Cellular, and Systems Biology Concentration, should take CHM 131. Students cannot receive earned credit for both CHM 131 and CHM 134.)

CHM 131 Accelerated General Chemistry **OR**  
CHM 134 Accelerated Environmental Chemistry  
CHM 221 Organic Chemistry I  
CHM 222 Organic Chemistry II  
MAT 115 College Algebra w/Modeling (or waiver)

Foreign Language  
(Two courses in the same non-English language are required, one of which may be waived by a placement examination. This requirement will also satisfy the international perspective.)

### **Electives**

20 credits outside the major

### ***Learning Goal 1: Understand Fundamental Concepts in Biology***

Learning Outcome 1.1: Be able to describe, apply and integrate the fundamental concepts of biology including cell biology, ecology, evolution, genetics, organismal diversity, and organismal structure and function.

### ***Learning Goal 2: Understand the Scientific Method***

Learning Outcome 2.1: Recognize and identify steps and articulate process in the scientific method.

Learning Outcome 2.2: Develop the ability to identify and develop research questions/hypotheses, develop appropriate experimental design, conduct independent research, collect and interpret experimental data, and communicate experimental results & conclusions in an oral, written, and/or poster format.

### ***Learning Goal 3: Research Methods, Methodologies, and Experiences***

Learning Outcome 3.1: Be able to search for, evaluate, interpret, and communicate scientific information, including primary research journal articles, review articles, and popular scientific literature.

Learning Outcome 3.2: Gain experience with the tools of the biologist, including scientific equipment, library resources, computer applications, Internet resources, etc.

Learning Outcome 3.3: Be able to apply quantitative

### ***Learning Goal 4: Apply Knowledge & Skills***

Learning Outcome 4.1: Demonstrate proficiency in written, oral and visual communication skills.

Learning Outcome 4.2: Develop appropriate career skills essential for biologists, including the abilities to: set goals and priorities; work independently and in a group or team; demonstrate courtesy and respect to colleagues; accept responsibility for one's actions.

Learning Outcome 4.3: The ability to listen actively to, review, and evaluate the work of others.

Learning Outcome 4.4: Demonstrate an understanding and appreciation of one's role as a scientifically-literate global citizen and professional.  
methodologies to biological questions;