

# Biology - B.A.

College of  
Arts and Sciences

To address the breadth and depth essential to educating biologists, the biology major is structured to include both a broad foundation through core courses and opportunity for specialization within a biological subfield through biology electives. The major is designed to prepare the student for a post-baccalaureate profession in biology, for advanced professional training in the health sciences, or for graduate study in basic and applied areas of the biological sciences.

## 120 hours (minimum)

Any student earning a Bachelor of Arts (BA) degree must complete a minimum of 39 hours at the 300+ level. These hours are generally completed by the major requirements. However, keep this hour requirement in mind as you choose your course work for the requirements in the major. See the complete description of College requirements for a Bachelor of Arts degree on page 119 of the *Arts and Sciences* section of the *2012-2013 Undergraduate Bulletin* at: [www.uky.edu/Registrar/bulletinCurrent/a\\_s.pdf](http://www.uky.edu/Registrar/bulletinCurrent/a_s.pdf).

### UK Core Requirements

See the *UK Core* section of the *2012-2013 Undergraduate Bulletin* at: [www.uky.edu/Registrar/bulletinCurrent/ukc.pdf](http://www.uky.edu/Registrar/bulletinCurrent/ukc.pdf) for the complete UK Core requirements. The courses listed below are (a) recommended by the college, or (b) required courses that also fulfill UK Core areas. Students should work closely with their advisor to complete the UK Core requirements.

#### I. Intellectual Inquiry in Arts and Creativity

Choose one course from approved list ..... 3

#### II. Intellectual Inquiry in the Humanities

Choose one course from approved list ..... 3

#### III. Intellectual Inquiry in the Social Sciences

Choose one course from approved list ..... 3

#### IV. Intellectual Inquiry in the Natural, Physical, and Mathematical Sciences

CHE 105 General College Chemistry I ..... 4  
CHE 111 Laboratory to Accompany General Chemistry I ..... 1

#### V. Composition and Communication I

CIS/WRD 110 Composition and Communication I ..... 3

#### VI. Composition and Communication II

CIS/WRD 111 Composition and Communication II ..... 3

#### VII. Quantitative Foundations

MA 137 Calculus I With Life Science Applications  
or  
MA 113 Calculus I  
or  
MA 123 Elementary Calculus and its Applications ..... 4

#### VIII. Statistical Inferential Reasoning

Choose one course from approved list ..... 3

#### IX. Community, Culture and Citizenship in the USA

Choose one course from approved list ..... 3

#### X. Global Dynamics

Choose one course from approved list ..... 3

**UK Core Hours** ..... **33**

### College Requirements

Humanities – two courses ..... 6  
Social Science – two courses ..... 6  
Third and fourth semesters of language ..... 6  
Free Electives ..... 6

Lab or Field Experience – *satisfied by major*

Graduation Writing Requirement (choose any GWR Humanities 300-level course; this will also count as one of the two Humanities courses in the College Requirements)

**UK Core and College hours:** ..... **57 (45)**

### Premajor Requirements

BIO 148 Introductory Biology I ..... 3  
BIO 152 Principles of Biology II ..... 3  
BIO 155 Laboratory for Introductory Biology I ..... 1  
\*CHE 105 General College Chemistry I ..... 4  
\*CHE 111 Laboratory to Accompany General Chemistry I ..... 1  
CHE 107 General College Chemistry II ..... 3  
CHE 113 Laboratory to Accompany General Chemistry II ..... 2  
MA 137 Calculus I With Life Science Applications  
or  
\*MA 113 Calculus I  
or  
\*MA 123 Elementary Calculus and its Applications ..... 4  
Free Elective ..... 0-1

**Premajor hours:** ..... **21**

### Major Requirements

Minimum major requirement for graduation is 54 credit hours in courses as detailed below. The minimum GPA of all major and premajor courses must be at least 2.0.

#### First Tier Core

BIO 303 Introduction to Evolution ..... 4  
BIO 304 Principles of Genetics ..... 4

#### Second Tier Core

To be taken **after** completion of First Tier Core.

Choose **two** of the following to complete 8 hours:

BIO 350 Animal Physiology  
or  
BIO 430G Plant Physiology ..... 4  
BIO 315 Introduction to Cell Biology ..... 4  
BIO 325 Ecology ..... 4

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# Biology (B.A.) • 2

## plus:

Statistics (any UK Core Statistical Reasoning course) .....	3
BIO 425 Biology Seminar (Subtitle required) or	
BIO 499 Biology Research Seminar .....	1
<b>Core hours:</b> .....	<b>20</b>

## Other Course Work Required for the Major

### From Outside the Major Department

CHE 236/231 Survey of Organic Chemistry/ Organic Chemistry Laboratory I or	
CHE 230/231 Organic Chemistry I/Laboratory I .....	4
*PHY 211 General Physics or	
†PHY 151 Introduction to Physics .....	3-5
<i>†PHY 151 is not accepted for admission into Medical, Dental or Pharmacy School. Check with your advisor before choosing a physics course.</i>	
<b>Other Major hours:</b> .....	<b>7-9</b>

## Options

Complete **one** of the following options. **Students cannot mix and match requirements from the two options.** An option must be completed in its entirety.

### Option A – Minor Option

**NOTE:** Fourteen of these hours must be at the 300-level or above.

Complete the requirements for any minor other than the biology minor .....	18-21
**Biology Electives .....	4-9

*\*\*Biology Electives – One course must have a lab, which may be BIO 395. A maximum of only 3 credits of BIO 395 may be used in this section.*

If students double-dip major and minor requirements, additional biology electives must be taken to meet the graduation requirement of 55 hours for the B.A. in Biology.

<b>Total Hours Option A</b> .....	<b>25-27</b>
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### Option B – Topical Focus Option

**NOTE:** Fourteen of these hours must be at the 300-level or above.

Complete a 12 credit hour sequence of courses with a topical focus. At least 6 of these hours must be at the 300-level or above .....

**NOTE:** Students who have multiple interests or interests that do not fall into the requirements for a minor offered at the University of Kentucky may select a 12 credit hour sequence of courses with a topical focus. Courses in several disciplines and in the various interdisciplinary programs may be combined to pursue the topical focus. **Students interested in pursuing Option B must have the 12 credit hour sequence of courses APPROVED IN ADVANCE by the Director of Undergraduate Studies, Department of Biology. Students must submit an Approval of Topical Focus Form to the Director of Undergraduate Studies.**

**Biology Electives .....	13-15
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*\*\*Biology Electives – One course must have a lab, which may be BIO 395. A maximum of 6 credits of BIO 395 may be used in this section.*

<b>Total Hours Option B</b> .....	<b>25-27</b>
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**Acceptable biology electives from outside the Department.** Other courses may be accepted at the discretion of the Director of Undergraduate Studies in the Department of Biology:

**A&S** 300, 500 (acceptable as upper-level credit **only** when offered by the Department of Biology)

**ABT** 460

**ANA** 511, 512, 516 (some other anatomy courses at the 500-level are accepted, but are usually restricted to professional students)

**ANT** 332

**ASC** 364, 378

**BCH** 401G

**CHE** 226, 233, 440G, 441G, 442G, 446G, 532, 533, 550, 552, 558, 565

**ENT** 310, 320, 360, 402, 460, 561, 564, 568 (ENT 360 is **not** acceptable as an upper-level elective for Biology majors. Substitutes for BIO 304 only if student transferred into Biology major after taking this course. Cross-listed as ABT/ASC/ENT/PLS 360.)

**FOR** 315, 340, 375, 402

**FSC** 530

**GLY/EES** 401G

**MI** 494G, 595, 598

**NRE** 320, 420G, 450G, 455G

**PGY** 412G, 560 (PGY 412G is acceptable as an elective for upper-level biology credit but **does not** substitute for BIO 350 or BIO 430G)

**PLS** 320, 330, 332, 366, 450G, 502, 566, 567

**PPA** 400G

**PSY** 456, 459

**STA** 570, 580 (Biology usually accepts only **one** of these courses for each student. Other STA courses may be accepted at the discretion of your advisor, and this may depend upon the area of biology in which you choose to specialize.)

**TOX** 509

### Total Minimum Hours

<b>Required for Degree</b> .....	<b>120</b>
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*\*Course used towards completion of a UK Core Requirement.*