

Biology - B.S.

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 Science (BS) degree must complete a minimum of 60 hours in natural, physical, mathematical, and computer science. A complete description of College requirements for a Bachelor of Science degree, including a specific listing of courses applicable to the 60-hour requirement, is in the *Arts and Sciences* section of the 2016-2017 *Undergraduate Bulletin*.

UK Core Requirements

See the *UK Core* section of the 2016-2017 *Undergraduate Bulletin* 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 Science

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 113 Calculus I

or

MA 137 Calculus I With Life Science Applications 4

VIII. Statistical Inferential Reasoning

STA 296 Statistical Methods and Motivations 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: **32-33**

Graduation Composition and Communication Requirement (GCCR)

Choose one of three options:

1. BIO 425 Biology Seminar (Subtitle required)

and

BIO 350 Animal Physiology 5

2. BIO 425 Biology Seminar (Subtitle required)

and

BIO 430G Plant Physiology 5

3. WRD 204 Technical Writing 3

Graduation Composition and Communication Requirement

hours(GCCR) **3-5**

College Requirements

Humanities – one course 3

Social Science – one course 3

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)

General Education and College hours: **49 (39)**

Premajor Requirements

BIO 148 Introductory Biology I 3

BIO 152 Principles of Biology II 3

BIO 155 Laboratory for Introductory Biology I

or

BIO 198 Scholars Biology Research 1-2

†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 137/138 Calculus I/II With Life Science Applications

or

MA 113/114 Calculus I/II 8

Premajor hours: **25-26**

†The CHE 105 requirement can be satisfied with CHE 109 and CHE 110.

Major Requirements

Minimum major requirement for graduation is 56 credit hours in courses not open to freshmen. The minimum GPA of all major and premajor courses must be at least 2.0.

Major Core

First Tier Core

BIO 303 Introduction to Evolution 4

BIO 304 Principles of Genetics 4

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University of Kentucky is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate, baccalaureate, masters, and doctorate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097, call 404-679-4500, or online at www.sacscoc.org for questions about the accreditation of University of Kentucky.

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Second Tier Core

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

BIO 315 Introduction to Cell Biology	4
BIO 325 Ecology	4
BIO 350 Animal Physiology or	
BIO 430G Plant Physiology	4
STA 296 Statistical Methods and Motivations	3
BIO 425 Biology Seminar (Subtitle required) or	
BIO 499 Biology Research Seminar	1
Core hours:	24

Other Course Work Required for the Major From Outside the Major Department

CHE 230 Organic Chemistry I	3
CHE 231 Organic Chemistry Laboratory I	1
CHE 232 Organic Chemistry II	3
PHY 211 General Physics or	
PHY 231/241 General University Physics/Laboratory AND	
PHY 213 General Physics or	
PHY 232/242 General University Physics/Laboratory	10

Biology Electives

Choose 15 hours of acceptable biology electives 15
15 hours to be chosen from 300+ level BIO courses (excluding BIO 208) or the list below. One course must have lab, one of which may be BIO 395. A maximum of 6 hours of Independent Research course work from biological sciences departments may be counted within the 15 hour requirement. **NOTE:** ANA 209, BIO 208, BIO 209 and PGY 206 **CANNOT** be used for this requirement. A maximum of 1 credit hour of seminar course work (for example BIO 425, BIO 426, BIO 427) may be counted within the 15 hour requirement.

Other Major hours:	32
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Acceptable upper-level electives for the B.S. in Biology:

BIO 3XX, BIO 4XX, BIO 5XX, BIO 6XX (*BIO 208 and BIO 209 CANNOT be used to satisfy the upper-level requirement for the B.A., B.S. or minor in 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, 441, 442G, 446G, 532, 533, 550, 552, 558, 565

EES 401G

ENT 310, 320, 402, 460, 561, 564, 568

FOR 340*, 402*

FSC 530*

MI 494G, 595*, 598

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

PGY 412G, 560, 590 (*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, 552, 565

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

Other courses may be accepted at the discretion of the Director of Undergraduate Studies in the Department of Biology.

**Lab courses that satisfy upper-level lab requirement.*

Total Minimum Hours Required for Degree 120