Bachelor of Science in Biology

Biology—B.S.

Ecology, Evolution, and Organismal Biology subplan

This academic subplan within the B.S. Biology major focuses on the integration of biological systems at the whole organism level, and on how living organisms exist in populations, species, and communities within their environment. Core classes such as genetics, physiology, ecology, and evolutionary biology are combined with courses such as biochemistry, statistics, and systematics or organismal diversity to provide a strong foundation in biology. Students choose electives from a diverse set of classes that allow them to focus on areas of interest.

Undergraduate Admission

Admission to KU

All students applying for admission must send high school and college transcripts to the Office of Admissions. Unless they are college transfer students with at least 24 hours of credit, prospective students must send ACT or SAT scores to the Office of Admissions. Prospective first-year students should be aware that KU has qualified admission requirements that all new first-year students must meet to be admitted. Consult the Office of Admissions (http://admissions.ku.edu) for application deadlines and specific admission requirements.

Visit the Office of International Student and Scholar Services (http://www.iss.ku.edu) for information about international admissions.

Students considering transferring to KU may see how their college-level course work will transfer on the Office of Admissions website.

Admission to the College of Liberal Arts and Sciences

Admission to the College is a different process from admission to a major field. Some CLAS departments have admission requirements. See individual department/program sections for departmental admission requirements.

First- and Second-Year Preparation

Because biology study requires preparation in other sciences, students should begin meeting major requirements in the first year. It is particularly important to take CHEM 130 and CHEM 135 in the first year and, for several majors, to take CHEM 330, CHEM 331, CHEM 335, and CHEM 336 in the second year. Ideally, most majors should also take BIOL 150 and BIOL 152 during the first year, as well as BIOL 105. Students who have taken BIOL 100 and BIOL 102, have earned an A or B in both courses, and have decided to major in a biological science should consult a UBP advisor to request permission to substitute BIOL 100 and BIOL 102 for BIOL 150.

Majors and Concentrations

Bachelor’s degree requirements in biology are modified as necessary. Current requirements are available in the UBP office and online (http://www.kuub.ku.edu). Major programs are offered in biochemistry, biology, human biology, and microbiology. Students may choose to concentrate in a range of specialties in the biological sciences, such as botany, cellular biology, developmental biology, environmental biology, ecology, entomology, genetics, marine biology, molecular biology, neurobiology, paleontology, physiology, systematics, or zoology (invertebrate or vertebrate).

Requirements for the B.S. Degree in Biology

General Education Requirements

In addition to degree and major requirements for all plans and subplans, all students must complete the KU Core.

Ecology, Evolution, and Organismal Biology

General Science Requirements (29-32)

Majors must complete the following general science requirements that serve as foundational courses for this major.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Satisfied by:</th>
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<tbody>
<tr>
<td>Biology Orientation Seminar.</td>
<td>BIOL 105</td>
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<tr>
<td>Chemistry I. Satisfied by one of the following:</td>
<td>CHEM 130, CHEM 190 &amp; CHEM 191</td>
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<tr>
<td>Calculus.</td>
<td>MATH 150, MATH 155 &amp; MATH 156</td>
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<tr>
<td>Organic Chemistry I. Satisfied by one of the following:</td>
<td>CHEM 310</td>
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<tr>
<td>Introductory Biochemistry.</td>
<td>BIOL 600</td>
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<tr>
<td>Physics I. Satisfied by one of the following:</td>
<td>PHSX 211, PHSX 213</td>
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<tr>
<td>Physics II. Satisfied by one of the following:</td>
<td>PHSX 215</td>
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Ecology, Evolution, and Organismal Biology Requirements (30)

- CHEM 130: General Chemistry I
- CHEM 195: Foundations of Chemistry II, Honors
- CHEM 196: Foundations of Chemistry II Laboratory, Honors
- CHEM 330: Organic Chemistry I
- CHEM 380: Organic Chemistry I, Honors
- Introductory Biochemistry: Satisfied by:
  - BIOL 600: Introductory Biochemistry, Lectures
- Mathematics: Satisfied by:
  - MATH 115: Calculus I
  - MATH 125: Calculus I
  - MATH 145: Calculus I, Honors
- Introductory Physics: Satisfied by:
  - PHSX 114: College Physics I
  - PHSX 211: General Physics I, Honors
  - PHSX 213: General Physics I Honors
- Calculus II: Satisfied by:
  - MATH 116: Calculus II
  - MATH 116 & MATH 117: Calculus II
- Mathematics and Calculus II: Satisfied by:
  - MATH 125: Calculus I
- Calculus I: Satisfied by:
  - MATH 115: Calculus I
- Calculus II: Satisfied by:
  - MATH 125: Calculus I
- Calculus I, Honors: Satisfied by:
  - MATH 145: Calculus I, Honors
- Physics I: Satisfied by:
  - PHSX 211: General Physics I
  - PHSX 211 & PHSX 212: General Physics I Laboratory
- Physics I: Honors: Satisfied by:
  - PHSX 213: General Physics I Honors
- Physics II: Satisfied by:
  - PHSX 212: General Physics II
  - PHSX 212 & PHSX 213: General Physics II Laboratory
  - PHSX 214: General Physics II Honors
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Satisfied by completing 30 hours from courses below. These additional science courses are included in the Ecology, Evolution, and Organismal Biology major hours and GPA calculations.

Principles of Molecular & Cellular Biology. Satisfied by one of the following:

- BIOL 150: Principles of Molecular and Cellular Biology
- BIOL 151: Principles of Molecular and Cellular Biology, Honors

Principles of Organismal Biology. Satisfied by one of the following:

- BIOL 152: Principles of Organismal Biology
- BIOL 153: Principles of Organismal Biology, Honors

Principles of Genetics. Satisfied by one of the following:

- BIOL 350: Principles of Genetics
- BIOL 351: Principles of Genetics, Honors

Physiology of Organisms. Satisfied by one of the following:

- BIOL 501: Physiological Adaptations of Plants to Extreme Environments
- BIOL 544: Comparative Animal Physiology

Evolutionary Biology. Satisfied by:

- BIOL 412: Evolutionary Biology

Principles of Ecology. Satisfied by one of the following:

- BIOL 414: Principles of Ecology

History & Diversity of Organisms / Systematics. Satisfied by one of the following:

- BIOL 413: History and Diversity of Organisms
- BIOL 428: Introduction to Systematics

Introduction to Biostatistics. Satisfied by:

- BIOL 570: Introduction to Biostatistics

Senior Seminar in EEOB. Satisfied by:

- BIOL 599: Senior Seminar: _____ (in EEOB. Must be taken in senior year.)

Ecology, Evolution, and Organismal Biology Required Electives, Laboratory, and Seminar (18)

Satisfied by completing 18 hours of BIOL courses numbered 400 or higher, including at least 4 hrs of lab credit and 2 hrs of seminar/topics course (BIOL 419, BIOL 420, BIOL 499, BIOL 701). No more than 5 hrs of BIOL 423 Non-Lab Independent Study and/or BIOL 424 Independent Study (combined) can by applied to the elective requirement, with no more than 2 hrs of BIOL 424 being applied to the laboratory requirement. The Undergraduate Biology Program must approve exceptions to these elective requirements.

Laboratory. Satisfied by completing at least 4 hrs of laboratory courses. No more than 2 hrs of BIOL 424 can count toward lab requirement.

Seminar. Satisfied by completing at least 2 hrs of the following seminar or topics course:

- BIOL 419: Topics in: ______
- BIOL 420: Seminar: ______
- BIOL 499: Introduction to Honors Research
- BIOL 701: Topics in: ______

Major Hours & Major GPA

While completing all required courses, majors must also meet each of the following hour and grade-point average minimum standards:

Major Hours

Satisfied by 48 hours of major courses.

Major Hours in Residence

Satisfied by a minimum of 15 hours of KU resident credit in the major.

Major Junior/Senior Hours

Satisfied by a minimum of 12 hours from junior/senior courses (300+) in the major.

Major Junior/Senior Graduation GPA

Satisfied by a minimum of a 2.0 KU GPA in junior/senior courses (300+) in the major. GPA calculations include all junior/senior courses in the field of study including F’s and repeated courses. See the Semester/Cumulative GPA Calculator (http://clas.ku.edu/undergrad/tools/gpa).

Departmental Honors

Undergraduate majors are eligible to graduate with honors in biology if they fulfill the following requirements:

1. Complete all course work required for the appropriate degree in biology.
2. Achieve a minimum grade-point average of 3.25 overall and 3.5 in the major.
3. Complete BIOL 499 Introduction to Honors Research with a grade of B or higher.
4. Complete BIOL 699 Biology Honors Research Colloquium with a grade of B or higher.
5. Complete an independent research project under the supervision of a faculty member in an area appropriate to the degree sought.
6. Submit an honors thesis to the honors committee once the research is complete and present the results of the completed research at the honors research symposium.

Students majoring in Human Biology with Anthropology, Applied Behavioral Science, Psychology, or Speech-Language-Hearing concentrations will follow the honors requirements for their respective concentration department.

Specific guidelines and intent forms are available in the Undergraduate Biology Program office and online (http://www.kuub.ku.edu). Candidates must declare their intent to graduate with honors at least 2 semesters before graduation.

Study Abroad

Consult an advisor at least 4 months before undertaking study abroad. Consult the Office of Study Abroad (http://www.studyabroad.ku.edu), 108 Lippincott Hall, for information about study in one of the many countries (e.g., Scotland, Australia, Switzerland) with special arrangements with KU.