BOTANY - B.S.

College of Arts and Sciences
Department of Biological Sciences
www.kent.edu/biology

Examples of Possible Careers*

Biological science teachers, postsecondary
• 9.3% much faster than the average
• 64,700 number of jobs
• $85,600 potential earnings

Biological scientists, all other
• 2.2% slower than the average
• 44,700 number of jobs
• $85,290 potential earnings

Natural sciences managers
• 4.8% about as fast as the average
• 71,400 number of jobs
• $137,940 potential earnings

Soil and plant scientists
• 6.8% faster than the average
• 17,800 number of jobs
• $66,120 potential earnings

Contact Information
• Program Coordinator: Edgar Kooijman | ekooijma@kent.edu | 330-672-8568
• Speak with an Advisor
• Chat with an Admissions Counselor

Fully Offered
• Delivery:
  • In person
• Location:
  • Kent Campus

Description

The Bachelor of Science degree in Botany focuses on the scientific study of plants, and the understanding of how plants provide aesthetic beauty, as well as materials for the basic needs, including food, shelter and oxygen. Botanical research has diverse applications in modern horticulture, agriculture, soil science and forestry, in addition to pharmacology and biotechnology.

Many students continue their education in graduate or professional programs. Those opting to enter directly into the workforce find jobs in fields related to the economic importance of plants, including agriculturally-based and related professions, environmental consulting or in federal, state or local agencies. The Department of Biological Sciences offers several mechanisms to help students prepare for their future careers.

Admission Requirements

The university affirmatively strives to provide educational opportunities and access to students with varied backgrounds, those with special talents and adult students who graduated from high school three or more years ago.

First-Year Students on the Kent Campus: First-year admission policy on the Kent Campus is selective. Admission decisions are based upon cumulative grade point average, strength of high school college preparatory curriculum and grade trends. Students not admissible to the Kent Campus may be administratively referred to one of the seven regional campus to begin their college coursework. For more information, visit the admissions website for first-year students.

First-Year Students on the Regional Campuses: First-year admission to Kent State’s campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Twinsburg Academic Center, is open to anyone with a high school diploma or its equivalent. Check with a regional campus admissions office to determine application requirements, as they may differ among campuses.

International Students: All international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning a minimum 525 TOEFL score (71 on the Internet-based version), minimum 75 MELAB score, minimum 6.0 IELTS score, minimum 48 PTE score or minimum 100 DET score; or by completing the ESL level 112 Intensive Program. For more information, visit the admissions website for international students.

Transfer Students: For more information, visit the admissions website for transfer students.

Former Students: Former Kent State students or graduates who have not attended another college or university since Kent State may complete the reenrollment or reinstatement form on the University Registrar’s website.

Program Learning Outcomes

Graduates of this program will be able to:

1. Understand fundamental biological principles.
2. Acquire fundamental skills necessary for laboratory and field investigations.
3. Conduct proper experimental design, analyze biological data and communicate research results.
4. Know and appreciate the role that biology plays in societal issues, such as those related to the environment, biodiversity, ethics, human health and disease.

University Requirements

All students in a bachelor's degree program at Kent State University must complete the following university requirements for graduation.

*Note
Source of occupation titles and labor data is from the U.S. Bureau of Labor Statistics’ Occupational Outlook Handbook. Data comprises projected percent change in employment over the next 10 years; nation-wide employment numbers; and the yearly median wage at which half of the workers in the occupation earned more than that amount and half earned less.
NOTE: University requirements may be fulfilled in this program by specific course requirements. Please see Program Requirements for details.

Destination Kent State: First Year Experience 1
Course is not required for students with 25 transfer credits, excluding College Credit Plus, or age 21+ at time of admission.

Diversity Domestic/Global (DIV/DIVG) 2 courses
Students must successfully complete one domestic and one global course, of which one must be from the Kent Core.

Experiential Learning Requirement (ELR) varies
Students must successfully complete one course or approved experience.

Kent Core (see table below) 36-37
Writing-Intensive Course (WIC) 1 course
Students must earn a minimum C grade in the course.

Upper-Division Requirement 39
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate.

Total Credit Hour Requirement 120

Kent Core Requirements
Kent Core Composition (KCMP) 6
Kent Core Mathematics and Critical Reasoning (KMCR) 3
Kent Core Humanities and Fine Arts (KHUM/KFA) (min one course each) 9
Kent Core Social Sciences (KSS) (must be from two disciplines) 6
Kent Core Basic Sciences (KBS/KLAB) (must include one laboratory) 6-7
Kent Core Additional (KADL) 6
Total Credit Hours: 36-37

Program Requirements
Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSCI 10110</td>
<td>BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)</td>
<td>4</td>
</tr>
<tr>
<td>BSCI 10120</td>
<td>GENERAL FOUNDATIONS (ELR) (KBS) (KLAB)</td>
<td>4</td>
</tr>
<tr>
<td>BSCI 30156</td>
<td>ELEMENTS OF GENETICS</td>
<td>3</td>
</tr>
<tr>
<td>BSCI 40163</td>
<td>EVOLUTION</td>
<td>3</td>
</tr>
<tr>
<td>BSCI 40600</td>
<td>WRITING IN THE BIOLOGICAL SCIENCES (WIC)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 10060</td>
<td>GENERAL CHEMISTRY I (KBS)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 10061</td>
<td>GENERAL CHEMISTRY II (KBS)</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 10062</td>
<td>GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 10063</td>
<td>GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 20481</td>
<td>BASIC ORGANIC CHEMISTRY I</td>
<td>3-4</td>
</tr>
<tr>
<td>CHEM 20482</td>
<td>BASIC ORGANIC CHEMISTRY II</td>
<td>1-3</td>
</tr>
<tr>
<td>CHEM 30481</td>
<td>ORGANIC CHEMISTRY LABORATORY I (ELR)</td>
<td></td>
</tr>
<tr>
<td>CHEM 30482</td>
<td>ORGANIC CHEMISTRY II</td>
<td></td>
</tr>
<tr>
<td>CHEM 40120</td>
<td>ORGANIC CHEMISTRY I LABORATORY II</td>
<td></td>
</tr>
<tr>
<td>MATH 12002</td>
<td>ANALYTIC GEOMETRY AND CALCULUS I (KMCR)</td>
<td>5</td>
</tr>
<tr>
<td>MATH 12003</td>
<td>ANALYTIC GEOMETRY AND CALCULUS II</td>
<td>3-5</td>
</tr>
<tr>
<td>or MATH 30011</td>
<td>BASIC PROBABILITY AND STATISTICS</td>
<td></td>
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</table>

Botany Core Electives, choose from the following: 12

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BSCI 30270</td>
<td>GENERAL PLANT BIOLOGY</td>
</tr>
<tr>
<td>BSCI 30271</td>
<td>GENERAL PLANT BIOLOGY LABORATORY</td>
</tr>
<tr>
<td>BSCI 30274</td>
<td>FORESTRY</td>
</tr>
<tr>
<td>BSCI 30275</td>
<td>LOCAL FLORA (ELR)</td>
</tr>
<tr>
<td>BSCI 30277</td>
<td>ECONOMIC BOTANY</td>
</tr>
<tr>
<td>BSCI 40162</td>
<td>SOIL BIOLOGY</td>
</tr>
<tr>
<td>BSCI 40216</td>
<td>PLANT ANATOMY</td>
</tr>
</tbody>
</table>

Upper-Division Requirement 39
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate.

Total Credit Hour Requirement 120

Notes:
1. A minimum C grade must be earned to fulfill the writing-intensive requirement.
2. CHEM 20482 may be substituted with CHEM 30284 with faculty advisor approval.
3. Students should select their electives in consultation with an advisor. To fulfill this elective list, students must select a minimum of one from the following courses: BSCI 30105, BSCI 40191, BSCI 40192, BSCI 40196, BSCI 40199. However, they may only select a maximum of 6 credit hours of any combination of these courses (with no more than 4 credit hours S/U graded). Enrollment in these course must be determined with a faculty advisor.

Graduation Requirements
Minimum Major GPA 2.000
Minimum Overall GPA 2.000

The following Biological Sciences (BSCI) courses may NOT be used in the elective category for majors or minors in the Department of Biological Sciences:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSCI 10001</td>
<td>HUMAN BIOLOGY (KBS)</td>
<td>3</td>
</tr>
<tr>
<td>BSCI 10002</td>
<td>LIFE ON PLANET EARTH (KBS)</td>
<td>3</td>
</tr>
<tr>
<td>BSCI 10003</td>
<td>LABORATORY EXPERIENCE IN BIOLOGY (KBS) (KLAB)</td>
<td>1</td>
</tr>
</tbody>
</table>

Notes:
1. A minimum C grade must be earned to fulfill the writing-intensive requirement.
2. CHEM 20482 may be substituted with CHEM 30284 with faculty advisor approval.
3. Students should select their electives in consultation with an advisor. To fulfill this elective list, students must select a minimum of one from the following courses: BSCI 30105, BSCI 40191, BSCI 40192, BSCI 40196, BSCI 40199. However, they may only select a maximum of 6 credit hours of any combination of these courses (with no more than 4 credit hours S/U graded). Enrollment in these course must be determined with a faculty advisor.
### BSCI 10005
ANATOMY FOR VETERINARY TECHNICIANS 5

### BSCI 11010
FOUNDATIONAL ANATOMY AND PHYSIOLOGY I (KBS) (KLAB) 3

### BSCI 11020
FOUNDATIONAL ANATOMY AND PHYSIOLOGY II (KBS) (KLAB) 3

### BSCI 16001
HORTICULTURAL BOTANY 3

### BSCI 20019
BIOLOGICAL STRUCTURE AND FUNCTION 4

### BSCI 20021
BASIC MICROBIOLOGY 3

### BSCI 20022
BASIC MICROBIOLOGY LABORATORY 1

### BSCI 21010
ANATOMY AND PHYSIOLOGY I (KBS) (KLAB) 4

### BSCI 21020
ANATOMY AND PHYSIOLOGY II 4

### BSCI 26001
HORTICULTURAL BOTANY 3

### BSCI 26002
ECOLOGICAL PRINCIPLES OF PEST MANAGEMENT 3

### BSCI 26003
PLANT IDENTIFICATION AND SELECTION I 3

### BSCI 26004
PLANT IDENTIFICATION AND SELECTION II 3

### BSCI 30050
HUMAN GENETICS 3

### BSCI 40020
BIOLOGY OF AGING 3

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### Foreign Language College Requirement, B.S.
- Students pursuing the Bachelor of Science degree in the College of Arts and Sciences must complete 8 credit hours of foreign language.  
- Minimum Elementary I and II of the same language

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### Roadmap
This roadmap is a recommended semester-by-semester plan of study for this major. However, courses designated as critical (!) must be completed in the semester listed to ensure a timely graduation.

#### Semester One

<table>
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<td>! BSCI 10110</td>
<td>BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)</td>
<td>4</td>
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<tr>
<td>! CHEM 10060</td>
<td>GENERAL CHEMISTRY I (KBS)</td>
<td>4</td>
</tr>
<tr>
<td>! CHEM 10062</td>
<td>GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)</td>
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<tr>
<td>UC 10097</td>
<td>DESTINATION KENT STATE: FIRST YEAR EXPERIENCE</td>
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- Kent Core Requirement 3
- Kent Core Requirement 3

**Credit Hours:** 16

#### Semester Two

<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
<td>! BSCI 10120</td>
<td>BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB)</td>
<td>4</td>
</tr>
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<td>GENERAL CHEMISTRY II (KBS)</td>
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</tr>
<tr>
<td>! CHEM 10063</td>
<td>GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)</td>
<td>1</td>
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- Kent Core Requirement 3
- Kent Core Requirement 3

**Credit Hours:** 15

#### Semester Three

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<td>CHEM 20482</td>
<td>BASIC ORGANIC CHEMISTRY II or ORGANIC CHEMISTRY LABORATORY I (ELR) or ORGANIC CHEMISTRY II</td>
<td>0-3</td>
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<tr>
<td>or CHEM 30475</td>
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<td></td>
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<tr>
<td>or CHEM 30482</td>
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- Botany Core Elective 4
- Kent Core Requirement 3
- Kent Core Requirement 3
- Kent Core Requirement 3

**Credit Hours:** 17

#### Semester Four

<table>
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<th>Course Code</th>
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<th>Credits</th>
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<tr>
<td>! BSCI 30156</td>
<td>ELEMENTS OF GENETICS</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 20482</td>
<td>BASIC ORGANIC CHEMISTRY II or ORGANIC CHEMISTRY LABORATORY I (ELR) or ORGANIC CHEMISTRY II</td>
<td>0-3</td>
</tr>
<tr>
<td>or CHEM 30475</td>
<td></td>
<td></td>
</tr>
<tr>
<td>or CHEM 30482</td>
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</table>

- Botany Core Elective 4
- Biology, Chemistry, Physics Electives 3
- General Elective 3

**Credit Hours:** 13

#### Semester Five

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<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<td>MATH 12002</td>
<td>ANALYTIC GEOMETRY AND CALCULUS I (KMC)</td>
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- Botany Core Elective 4
- Biology, Chemistry, Physics Electives 3
- Foreign Language 4

**Credit Hours:** 16

#### Semester Six

<table>
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<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tr>
<td>MATH 12003</td>
<td>ANALYTIC GEOMETRY AND CALCULUS II or BASIC PROBABILITY AND STATISTICS</td>
<td>3-5</td>
</tr>
<tr>
<td>or MATH 30011</td>
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</tbody>
</table>

- Biology, Chemistry, Physics Electives 9
- Foreign Language 4

**Credit Hours:** 16

#### Semester Seven

<table>
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<tr>
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<th>Credits</th>
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<tbody>
<tr>
<td>BSCI 40163</td>
<td>EVOLUTION</td>
<td>3</td>
</tr>
<tr>
<td>BSCI 40600</td>
<td>WRITING IN THE BIOLOGICAL SCIENCES (WIC)</td>
<td>1</td>
</tr>
</tbody>
</table>
- Biology, Chemistry, Physics Electives 8
- General Electives 3

**Credit Hours:** 15

#### Semester Eight

- Biology, Chemistry, Physics Electives 3
- General Electives 9

**Credit Hours:** 12

**Minimum Total Credit Hours:** 120