BOTANY - B.S.

About This Program
Explore the fascinating world of plants with Kent State's Botany program. Our Bachelor of Science in Botany provides hands-on experience in plant physiology, ecology, genetics and more. With experienced faculty and valuable networking opportunities, the Botany program prepares you for a rewarding career in the field. Read more...

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

Program Delivery
- Delivery:
  - In person
- Location:
  - Kent Campus

Examples of Possible Careers and Salaries*

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

* Source of occupation titles and labor data comes 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.

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 campuses 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. For more information on admissions, contact the Regional Campuses admissions offices.

International Students: All international students must provide proof of English language proficiency unless they meet specific exceptions. For more information, visit the admissions website for international students.

Transfer Students: Students who have attended any other educational institution after graduating from high school must apply as undergraduate 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. Admission policies for undergraduate students may be found in the University Catalog.

Some programs may require that students meet certain requirements before progressing through the program. For programs with progression requirements, the information is shown on the Coursework tab.

Program Requirements

Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BSCI 10110</td>
<td>BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)</td>
<td>4</td>
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<tr>
<td>BSCI 10120</td>
<td>BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB)</td>
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<tr>
<td>BSCI 30156</td>
<td>ELEMENTS OF GENETICS</td>
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<td>BSCI 40163</td>
<td>EVOLUTION</td>
<td>3</td>
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<td>BSCI 40600</td>
<td>WRITING IN THE BIOLOGICAL SCIENCES (WIC)</td>
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<td>CHEM 10060</td>
<td>GENERAL CHEMISTRY I (KBS)</td>
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<tr>
<td>CHEM 10061</td>
<td>GENERAL CHEMISTRY II (KBS)</td>
<td>4</td>
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<td>CHEM 10062</td>
<td>GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)</td>
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<td>CHEM 10063</td>
<td>GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)</td>
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<tr>
<td>CHEM 20481 or CHEM 30481</td>
<td>BASIC ORGANIC CHEMISTRY I</td>
<td>3-4</td>
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<tr>
<td>CHEM 20482 or CHEM 30475</td>
<td>BASIC ORGANIC CHEMISTRY II (ELR)</td>
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Graduation Requirements

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MATH 12002</td>
<td>ANALYTIC GEOMETRY AND CALCULUS I (KMCR)</td>
<td>5</td>
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<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>
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</table>

Botany Core Electives, choose from the following: 12-14

- BSCI 30267 PLANT PHYSIOLOGY
- BSCI 30270 GENERAL PLANT BIOLOGY
- BSCI 30271 GENERAL PLANT BIOLOGY LABORATORY
- BSCI 30274 FORESTRY
- BSCI 30275 LOCAL FLORA (ELR)
- BSCI 30277 ECONOMIC BOTANY
- BSCI 40162 SOIL BIOLOGY
- BSCI 40270 PLANT ECOLOGY
- BSCI 40272 PLANT ANATOMY
- BSCI 40368 WETLAND ECOLOGY AND MANAGEMENT (ELR)

Biology, Chemistry, Physics Electives, choose from the following: 26

- CHEM 30482 ORGANIC CHEMISTRY II
- or CHEM 30482 ORGANIC CHEMISTRY II
- CHEM 30475 ORGANIC CHEMISTRY LABORATORY I (ELR)
- CHEM 30476 ORGANIC CHEMISTRY LABORATORY II
- PHY 13001 GENERAL COLLEGE PHYSICS I (KBS)
- & PHY 13021 GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)
- or PHY 23101 GENERAL UNIVERSITY PHYSICS I (KBS) (KLAB)
- PHY 13002 & PHY 13022 GENERAL COLLEGE PHYSICS II (KBS)
- & GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)
- or PHY 23102 GENERAL UNIVERSITY PHYSICS II (KBS) (KLAB)

Additional Requirements (courses do not count in major GPA)

- UC 10001 FLASHERS 101
- UC 10001 FLASHERS 101
- Foreign Language (see Foreign Language College Requirement below)
- Kent Core Composition
- Kent Core Humanities and Fine Arts (minimum one course from each)
- Kent Core Social Sciences (must be from two disciplines)
- General Electives (total credit hours depends on earning 120 credits
- hour, including 39 upper-division credit hours)

Minimum Total Credit Hours: 120

A minimum C grade must be earned to fulfill the writing-intensive requirement.

CHEM 20482 may be substituted with CHEM 30284 with faculty advisor approval.

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 courses must be determined with a faculty advisor.

Graduation Requirements

<table>
<thead>
<tr>
<th>Minimum Major GPA</th>
<th>Minimum Overall GPA</th>
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<td>2.000</td>
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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.\(^1\)
- The Bachelor of Science in Medical Laboratory Science is exempt from this requirement.\(^2\)
- Minimum Elementary I and II of the same language

\(^1\) All students with prior foreign language experience should take the foreign language placement test to determine the appropriate level at which to start. Some students may start beyond the Elementary I level and will complete the requirement with fewer credit hours and fewer courses. This may be accomplished by (1) passing a course beyond Elementary I through Intermediate II level; (2) receiving credit through one of the alternative credit programs offered by Kent State University; or (3) demonstrating language proficiency comparable to Elementary II of a foreign language. When students complete the requirement with fewer than 8 credit hours and two courses, they will complete remaining credit hours with general electives.

\(^2\) The Bachelor of Science in Medical Laboratory Science exemption exists under another college policy (Three-Plus-One Programs).

### 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.

<table>
<thead>
<tr>
<th>Semester One</th>
<th>Credits</th>
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<tbody>
<tr>
<td>! BSCI 10110</td>
<td>BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB) 4</td>
</tr>
<tr>
<td>! CHEM 10060</td>
<td>GENERAL CHEMISTRY I (KBS) 4</td>
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</tbody>
</table>
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CHEM 10062 GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB) 1

Credit Hours 16

Semester Two

! BSCI 10120 BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB) 4
! CHEM 10061 GENERAL CHEMISTRY II (KBS) 4

Kent Core Requirement 3

Kent Core Requirement 3

Credit Hours 15

Semester Three

! CHEM 20481 or CHEM 30481 BASIC ORGANIC CHEMISTRY I or ORGANIC CHEMISTRY I 3-4

CHEM 20482 or CHEM 30475 or CHEM 30482 BASIC ORGANIC CHEMISTRY II or ORGANIC CHEMISTRY LABORATORY I or ORGANIC CHEMISTRY II 0-3

Botany Core Elective 4

Kent Core Requirement 3

Kent Core Requirement 3

Credit Hours 17

Semester Four

! BSCI 30156 ELEMENTS OF GENETICS 3

CHEM 20482 or CHEM 30475 or CHEM 30482 BASIC ORGANIC CHEMISTRY II or ORGANIC CHEMISTRY LABORATORY I or ORGANIC CHEMISTRY II 0-3

Botany Core Elective 4

Biology, Chemistry, Physics Elective(s) 3

General Elective 3

Credit Hours 13

Semester Five

MATH 12002 ANALYTIC GEOMETRY AND CALCULUS I (KMCR) 5

Botany Core Elective 4

Biology, Chemistry, Physics Elective(s) 3

Foreign Language 4

Credit Hours 16

Semester Six

MATH 12003 or MATH 30011 ANALYTIC GEOMETRY AND CALCULUS II or BASIC PROBABILITY AND STATISTICS 3-5

Biology, Chemistry, Physics Electives 9

Foreign Language 4

Credit Hours 16

Semester Seven

BSCI 40163 EVOLUTION 3

BSCI 40600 WRITING IN THE BIOLOGICAL SCIENCES (WIC) 1

Biology, Chemistry, Physics Electives 8

General Elective 3

Credit Hours 15

Semester Eight

Biology, Chemistry, Physics Elective(s) 3

General Electives 9

Credit Hours 12

Minimum Total Credit Hours: 120

University Requirements

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

NOTE: University requirements may be fulfilled in this program by specific course requirements. Please see Program Requirements for details.

Flashes 101 (UC 10001) 1 credit hour

Course is not required for students with 30+ transfer credits (excluding College Credit Plus) or age 21+ at time of admission.

Diversity Domestic/Global (DIVD/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 credit hours

Students must earn a minimum C grade in the course.

Writing-Intensive Course (WIC) 1 course

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

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 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.
Full 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 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.