

# BOTANY - B.S.

**College of Arts and Sciences**  
 Department of Biological Sciences  
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 Kent Campus  
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## 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.

## Fully Offered At:

- Kent Campus

## 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.

**Freshman Students on the Kent Campus:** The freshman admission policy on the Kent Campus is selective. Admission decisions are based upon the following: cumulative grade point average, ACT and/or SAT scores, strength of high school college preparatory curriculum and grade trends. The Admissions Office at the Kent Campus may defer the admission of students who do not meet admissions criteria but who demonstrate areas of promise for successful college study. Deferred applicants may begin their college coursework at one of seven regional campuses of Kent State University. For more information on admissions, including additional requirements for some academic programs, visit the admissions website for new freshmen.

**Freshman Students on the Regional Campuses:** Kent State campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Regional Academic Center in Twinsburg, have open enrollment admission for students who hold a high school diploma, GED or equivalent.

**English Language Proficiency Requirements for 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 or minimum 48 PTE score, or by completing the ESL level 112 Intensive Program. For more information on

international admission, visit the Office of Global Education's admission website.

**Transfer, Transitioning and Former Students:** For more information about admission criteria for transfer, transitioning and former students, please visit the admissions 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:** 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 (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
Writing-Intensive Course (WIC)	1 course
Students must earn a minimum C grade in the course.	
Upper-Division Requirement	39 (or 42)
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate. Students in a B.A. and/or B.S. degree in the College of Arts and Sciences must complete 42 upper-division credit hours.	
Total Credit Hour Requirement	120
Some bachelor's degrees require students to complete more than 120 credit hours.	

## 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
<b>Total Credit Hours:</b>	<b>36-37</b>

## Program Requirements

### Major Requirements

Code	Title	Credit Hours
<b>Major Requirements (courses count in major GPA)</b>		
BSCI 10110	BIOLOGICAL DIVERSITY (KBS) (KLAB)	4
BSCI 10120	BIOLOGICAL FOUNDATIONS (KBS) (KLAB)	4
BSCI 30156	ELEMENTS OF GENETICS	3
BSCI 40163	EVOLUTION	3
BSCI 40600	WRITING IN THE BIOLOGICAL SCIENCES (WIC) <sup>1</sup>	1
CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
CHEM 10061	GENERAL CHEMISTRY II (KBS)	4
CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
CHEM 20481	BASIC ORGANIC CHEMISTRY I	3-4
or CHEM 30481	ORGANIC CHEMISTRY I	
CHEM 20482	BASIC ORGANIC CHEMISTRY II <sup>2</sup>	1-3
or CHEM 30475	ORGANIC CHEMISTRY LABORATORY I (ELR)	
or CHEM 30482	ORGANIC CHEMISTRY II	
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II	3-5
or MATH 30011	BASIC PROBABILITY AND STATISTICS	
Botany Core Electives, choose from the following:		12
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 40272	PLANT ANATOMY	
Biology, Chemistry, Physics Electives, choose from the following: <sup>3</sup>		26
Biology (BSCI) Electives <sup>3</sup>		
CHEM 20482	BASIC 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	and GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	
or PHY 23101	GENERAL UNIVERSITY PHYSICS I (KBS) (KLAB)	
PHY 13002	GENERAL COLLEGE PHYSICS II (KBS)	
& PHY 13022	and GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	
or PHY 23102	GENERAL UNIVERSITY PHYSICS II (KBS) (KLAB)	
<b>Additional Requirements (courses do not count in major GPA)</b>		
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Foreign Language (see Foreign Language College Requirement below)		8
Kent Core Composition		6
Kent Core Humanities and Fine Arts (minimum one course from each)		9
Kent Core Social Sciences (must be from two disciplines)		6

General Electives (total credit hours depends on earning 120 credit hours, including 42 upper-division credit hours) 15

Minimum Total Credit Hours: 120

- <sup>1</sup> A minimum C grade must be earned to fulfill the writing-intensive requirement.
- <sup>2</sup> CHEM 20482 may be substituted with CHEM 30284 with faculty advisor approval.
- <sup>3</sup> 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	Minimum Overall GPA
2.000	2.000

#### Foreign Language College Requirement

- Students pursuing the Bachelor of Science degree in the College of Arts and Sciences must complete 8 credit hours of foreign language. <sup>1</sup>
- Minimum Elementary I and II of the same language

- <sup>1</sup> 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 begin their university foreign language experience 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 the Elementary I through Intermediate II level or (2) receiving credit through Credit by Exam (CBE), the College Level Examination Program (CLEP), the Advanced Placement (AP) exam or credit through the International Baccalaureate (IB) program; or (3) being designated a "native speaker" of a non-English language (consult with the College of Arts and Sciences Advising Office for additional information). When students complete the requirement with fewer than 8 credit hours and two courses, they will complete the remaining hours with general electives.

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

Code	Title	Credit Hours
BSCI 10001	HUMAN BIOLOGY (KBS)	3
BSCI 10002	LIFE ON PLANET EARTH (KBS)	3
BSCI 10003	LABORATORY EXPERIENCE IN BIOLOGY (KBS) (KLAB)	1
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 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

## 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.

<b>Semester One</b>		<b>Credits</b>
!	BSCI 10110 BIOLOGICAL DIVERSITY (KBS) (KLAB)	4
!	CHEM 10060 GENERAL CHEMISTRY I (KBS)	4
!	CHEM 10062 GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
	UC 10097 DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
	Kent Core Requirement	3
	Kent Core Requirement	3
Credit Hours		16
<b>Semester Two</b>		
!	BSCI 10120 BIOLOGICAL FOUNDATIONS (KBS) (KLAB)	4
!	CHEM 10061 GENERAL CHEMISTRY II (KBS)	4
!	CHEM 10063 GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
	Kent Core Requirement	3
	Kent Core Requirement	3
Credit Hours		15
<b>Semester Three</b>		
!	CHEM 20481 BASIC ORGANIC CHEMISTRY I or CHEM 30481 or ORGANIC CHEMISTRY I	3-4
	CHEM 20482 BASIC ORGANIC CHEMISTRY II or CHEM 30475 (ELR) or CHEM 30482 or ORGANIC CHEMISTRY LABORATORY I or ORGANIC CHEMISTRY II	0-3
	Botany Core Elective	4
	Kent Core Requirement	3
	Kent Core Requirement	3
	Kent Core Requirement	3
Credit Hours		17
<b>Semester Four</b>		
!	BSCI 30156 ELEMENTS OF GENETICS	3
	CHEM 20482 BASIC ORGANIC CHEMISTRY II or CHEM 30475 (ELR) or CHEM 30482 or ORGANIC CHEMISTRY LABORATORY I or ORGANIC CHEMISTRY II	0-3
	Botany Core Elective	4
	Biology, Chemistry, Physics Electives	3
	General Elective	3
Credit Hours		13
<b>Semester Five</b>		
	MATH 12002 ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
	Botany Core Elective	4
	Biology, Chemistry, Physics Electives	3
	Foreign Language	4
Credit Hours		16
<b>Semester Six</b>		
	MATH 12003 ANALYTIC GEOMETRY AND CALCULUS II or MATH 30011 or BASIC PROBABILITY AND STATISTICS	3-5

	Biology, Chemistry, Physics Electives	9
	Foreign Language	4
Credit Hours		16
<b>Semester Seven</b>		
	BSCI 40163 EVOLUTION	3
	BSCI 40600 WRITING IN THE BIOLOGICAL SCIENCES (WIC)	1
	Biology, Chemistry, Physics Electives	8
	General Electives	3
Credit Hours		15
<b>Semester Eight</b>		
	Biology, Chemistry, Physics Electives	3
	General Electives	9
Credit Hours		12
Minimum Total Credit Hours:		120