PLANT BIOLOGY - B.S.

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

About This Program

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

Contact Information

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- 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.

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 proficiency of the English language (unless they meet specific exceptions) through the submission of an English language proficiency test score or by completing English language classes at Kent State's English as a Second Language Center before entering their program. For more information, visit the admissions website for international students.

Former Students: Former Kent State students who have not attended another institution since Kent State and were not academically dismissed will complete the re-enrollment process through the Financial, Billing and Enrollment Center. Former students who attended another college or university since leaving Kent State must apply for admissions as a transfer or post-undergraduate student.

Transfer Students: Students who attended an educational institution after graduating from high school or earning their GED must apply as transfer students. For more information, visit the admissions website for transfer students.

Admission policies for undergraduate students may be found in the University Catalog's Academic Policies.

Students may be required to meet certain criteria to progress in their program. Any progression requirements will be listed on the program's Coursework tab

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements (courses count in major GPA)		
BSCI 10110	BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)	4
BSCI 10120	BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB)	4
BSCI 30156	ELEMENTS OF GENETICS	3
BSCI 40163	EVOLUTION	3
BSCI 40224	QUANTITATIVE METHODS IN BIOLOGY	3-5
or MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II	
or MATH 30011	BASIC PROBABILITY AND STATISTICS	

BSCI 40600	WRITING IN THE BIOLOGICAL SCIENCES (WIC) [1]	1
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 [2]	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
Biology Elective, choose from the following: [3,4]		1-6
BSCI 30105	CAREER PATHWAYS IN BIOLOGY	
BSCI 40192	INTERNSHIP IN BIOLOGICAL SCIENCES (ELR)	
BSCI 40196	INDIVIDUAL INVESTIGATION (ELR)	
BSCI 40199	SENIOR HONORS THESIS (ELR)	
Biology, Chemistry, Physics Electives, choose from the following: [3]		20-25
CHEM 20482	BASIC ORGANIC CHEMISTRY II [2]	
or CHEM 30482	ORGANIC CHEMISTRY II	
CHEM 30475	ORGANIC CHEMISTRY LABORATORY I (ELR)	
CHEM 30476	ORGANIC CHEMISTRY LABORATORY II	
PHY 13001 & PHY 13021	GENERAL COLLEGE PHYSICS I (KBS) and 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) and GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	
or PHY 23102	GENERAL UNIVERSITY PHYSICS II (KBS) (KLAB)	
Any Biological Sciences (BSCI) Upper-Division course (30000 or 40000 level) [4]		
General Chemistry Electives, choose from the following: [5]		8
CHEM 10058 & CHEM 10059	GENERAL CHEMISTRY FOR LIFE SCIENCES I and GENERAL CHEMISTRY FOR LIFE SCIENCES II	
CHEM 10060 & CHEM 10061	GENERAL CHEMISTRY I (KBS) and GENERAL CHEMISTRY II (KBS)	
Plant Biology 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)	
Additional Requirements (courses do not count in major GPA)		
UC 10001	FLASHES 101	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
Kent Core Additional		2
General Electives (total credit hours depends on earning 120 credit hours, including 39 upper-division credit hours)		13
Minimum Total Credit Hours:		**120**

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 a faculty advisor. A total of 26 credit hours combined are required to fulfill the Biology Elective and Biology, Chemistry, Physics Electives.
4. A maximum 6 credit hours of any combination of BSCI 30105, BSCI 40192, BSCI 40196 and BSCI 40199 may be applied toward the major (with no more than 4 credit hours S/U graded). Enrollment in these courses must be determined with a faculty advisor.
5. Students who plan to attend a professional or graduate program are strongly encouraged to take CHEM 10060 and CHEM 10061.

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.000	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:

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	SMALL ANIMAL ANATOMY AND PHYSIOLOGY FOR VETERINARY TECHNICIANS	4
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 program. Students will work with their advisor to develop a sequence based on their academic goals and history. Courses designated as critical (!) must be completed in the semester listed to ensure a timely graduation.

	Semester One		Credits
!	BSCI 10110	BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)	4
!	CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
	UC 10001	FLASHES 101	1
!	General Chemistry Elective		4
	Kent Core Requirement		3
	Kent Core Requirement		3
		Credit Hours	**16**
	Semester Two		
!	BSCI 10120	BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB)	4
!	CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
!	General Chemistry Elective		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 (ELR) or ORGANIC CHEMISTRY II	0-3
	Plant Biology Core Electives		4
	Kent Core Requirement		3
	Kent Core Requirement		3
	Kent Core Requirement		3
		Credit Hours	**17**
	Semester Four		
!	BSCI 30156	ELEMENTS OF GENETICS	3
	BSCI 40600	WRITING IN THE BIOLOGICAL SCIENCES (WIC)	1
	CHEM 20482 or CHEM 30475 or CHEM 30482	BASIC ORGANIC CHEMISTRY II or ORGANIC CHEMISTRY LABORATORY I (ELR) or ORGANIC CHEMISTRY II	0-3
	Biology Elective and/or Biology, Chemistry, Physics Elective		3
	Plant Biology Core Electives		4-6
	Kent Core Requirement		2
		Credit Hours	**13**
	Semester Five		
	MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
	Biology Elective and/or Biology, Chemistry, Physics Elective		3
	Plant Biology Core Electives		4
	Foreign Language		4
		Credit Hours	**16**
	Semester Six		
	BSCI 40224 or MATH 12003 or MATH 30011	QUANTITATIVE METHODS IN BIOLOGY or ANALYTIC GEOMETRY AND CALCULUS II or BASIC PROBABILITY AND STATISTICS	3-5
	Biology Elective and/or Biology, Chemistry, Physics Electives		9
	Foreign Language		4
		Credit Hours	**16**
	Semester Seven		
	BSCI 40163	EVOLUTION	3
	Biology Elective and/or Biology, Chemistry, Physics Electives		8
	General Elective		3
		Credit Hours	**14**
	Semester Eight		
	Biology Elective and/or Biology, Chemistry, Physics Elective		3
	General Electives		10
		Credit Hours	**13**
		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
Writing-Intensive Course (WIC)	1 course
Students must earn a minimum C grade in the course.	
Upper-Division Requirement	39 credit hours
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate.	
Total Credit Hour Requirement	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
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.

Program Policies

Foreign Language Requirements

In general, students may elect any foreign language taught through the Department of Modern and Classical Language Studies. However, certain majors, concentrations and minors require specific languages or limit the languages from which students may choose. In addition, students who plan to pursue graduate study may need particular languages for that study. In such cases, students should seek the advice of the appropriate department before selecting a language.

Progress Toward Fulfillment

College of Arts and Sciences students are encouraged to begin meeting the foreign language requirement as early as possible in their program to ensure timely degree completion.

Mandatory Outcomes Assessment

In addition to the other General Requirements of the college, candidates for an undergraduate degree in the College of Arts and Sciences are required, as a condition of graduation, to participate in an outcomes assessment. These outcomes assessments are conducted by each undergraduate degree program in the College of Arts and Sciences.

Full Description

The Bachelor of Science degree in Plant Biology focuses on the scientific study of plants and 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.