BIOLOGY - B.S.

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

About This Program

Our Biology B.S. program provides you with a solid foundation in the fundamental principles of biology, as well as advanced knowledge in specialized areas of the discipline. With state-of-the-art facilities, cutting-edge technology and experienced faculty, you will gain the skills needed to succeed in the fast-paced world of biology. Read more...

Contact Information

- **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

Biological technicians

- 4.9% about as fast as the average
- 87,500 number of jobs
- $46,340 potential earnings

Life scientists, all other

- 4.6% about as fast as the average
- 7,000 number of jobs
- $82,000 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) 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 Academic score, or by completing the ELS level 112 Intensive Program. 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's Academic Policies.

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 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 40600	WRITING IN THE BIOLOGICAL SCIENCES (WIC) [1]	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	
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
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
General Electives (total credit hours depends on earning 120 credit hours, including 39 upper-division credit hours)		10
Concentrations		
Choose from the following:		53
Molecular and Cellular Biology		
Organismal Biology		
Pre-Medicine/Pre-Podiatry/Pre-Dentistry		
Minimum Total Credit Hours:		**120**

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

Molecular and Cellular Biology Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA)		
BSCI 30140	CELL BIOLOGY	4
BSCI 40158	MOLECULAR BIOLOGY	3
BSCI 40224	QUANTITATIVE METHODS IN BIOLOGY	3-5
or MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II	
or MATH 30011	BASIC PROBABILITY AND STATISTICS	
CHEM 20482	BASIC ORGANIC CHEMISTRY II [1]	1-3
or CHEM 30475	ORGANIC CHEMISTRY LABORATORY I (ELR)	
or CHEM 30482	ORGANIC CHEMISTRY II	
Biology Electives, choose from the following: [2,3]		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: [2]		25-30
CHEM 20482	BASIC ORGANIC CHEMISTRY II [1]	
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 Biology (BSCI) course [3]		
Additional Requirements (courses do not count in major GPA)		
Kent Core Social Sciences (must be from two disciplines)		6
General Electives		5
Minimum Total Credit Hours:		**53**

[1] CHEM 20482 may be substituted with CHEM 30284 with faculty advisor approval.

[2] Students should select their electives in consultation with an advisor. A total of 31 credit hours combined are required to fulfill the Biology Electives and Biology, Chemistry, Physics Electives.

[3] 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.

Organismal Biology Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA)		
BSCI 40224	QUANTITATIVE METHODS IN BIOLOGY	3-5
or MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II	
or MATH 30011	BASIC PROBABILITY AND STATISTICS	
CHEM 20482	BASIC ORGANIC CHEMISTRY II [1]	1-3
or CHEM 30475	ORGANIC CHEMISTRY LABORATORY I (ELR)	
or CHEM 30482	ORGANIC CHEMISTRY II	
Biology Electives, choose from the following: [2,3]		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: [2]		24-29
CHEM 20482	BASIC ORGANIC CHEMISTRY II [1]	
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 Biology (BSCI) course [3]		
Organismal Core Electives, choose from the following:		7-8
BSCI 30171	GENERAL MICROBIOLOGY	
BSCI 30270	GENERAL PLANT BIOLOGY	
BSCI 30275	LOCAL FLORA (ELR)	
BSCI 30360	GENERAL ECOLOGY	
BSCI 30560	INVERTEBRATE ZOOLOGY	
BSCI 30580	ENTOMOLOGY	
BSCI 40272	PLANT ANATOMY	
BSCI 40430	ANIMAL PHYSIOLOGY	
BSCI 40556	VERTEBRATE ZOOLOGY	
Additional Requirements (courses do not count in major GPA)		
Kent Core Social Sciences (must be from two disciplines)		6
General Electives		6
Minimum Total Credit Hours:		**53**

[1] CHEM 20482 may be substituted with CHEM 30284 with faculty advisor approval.

[2] Students should select their electives in consultation with an advisor. A total of 30 credit hours combined are required to fulfill the Biology Electives and Biology, Chemistry, Physics Electives.

[3] 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.

Pre-Medicine/Pre-Podiatry/Pre-Dentistry Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA)		
BSCI 30105	CAREER PATHWAYS IN BIOLOGY	1
BSCI 30130	HUMAN PHYSIOLOGY	3
or BSCI 40430	ANIMAL PHYSIOLOGY	
BSCI 30140	CELL BIOLOGY	4
BSCI 30171	GENERAL MICROBIOLOGY	4
CHEM 20482	BASIC ORGANIC CHEMISTRY II [1]	2-3
or CHEM 30482	ORGANIC CHEMISTRY II	
CHEM 30284	INTRODUCTORY BIOLOGICAL CHEMISTRY	4
or CHEM 40245	BIOCHEMICAL FOUNDATIONS OF MEDICINE	
CHEM 30475	ORGANIC CHEMISTRY LABORATORY I (ELR)	1
CHEM 30476	ORGANIC CHEMISTRY LABORATORY II	1
MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II	3-5
or MATH 30011	BASIC PROBABILITY AND STATISTICS	
PSYC 11762	GENERAL PSYCHOLOGY (DIVD) (KSS)	3
SOC 12050	INTRODUCTION TO SOCIOLOGY (DIVD) (KSS)	3
Biology (BSCI) Upper-Division Electives (30000 or 40000 level) [2]		14
Physics Electives, choose from the following:		10
PHY 13001 & PHY 13002 & PHY 13021 & PHY 13022	GENERAL COLLEGE PHYSICS I (KBS) and GENERAL COLLEGE PHYSICS II (KBS) and GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB) and GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	
PHY 23101 & PHY 23102	GENERAL UNIVERSITY PHYSICS I (KBS) (KLAB) and GENERAL UNIVERSITY PHYSICS II (KBS) (KLAB)	
Minimum Total Credit Hours:		**53**

[1] Students must stay within a single organic chemistry series. CHEM 20482 is required if CHEM 20481 is selected in the major core; CHEM 30482 is required if CHEM 30481 is selected in the major core.

[2] Students should select their upper-division biology electives in consultation with an advisor. The following courses are not required, but highly recommended for this major: BSCI 30518, BSCI 40174, BSCI 40517. In addition, students may take the following (maximum 6 credit hours total, maximum 4 credit hours S/U graded) for biology electives, but are not required to do so: BSCI 40192, BSCI 40196, BSCI 40199.

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

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 following programs are exempt from this requirement: The Bachelor of Science in Cybercriminology and the Bachelor of Science in Medical Laboratory Science.[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 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). The Bachelor of Science in Cybercriminology exemption is due to its extensive collaboration with and contribution from the Information Technology program in the College of Applied and Technical Studies, which does not have a foreign language requirement.

Roadmaps

Molecular and Cellular Biology Concentration

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		**Credits**
!	BSCI 10110	BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)	4
!	CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
!	CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
	UC 10001	FLASHES 101	1
	Kent Core Requirement		3
	Kent Core Requirement		3
		Credit Hours	**16**
	Semester Two		
!	BSCI 10120	BIOLOGICAL FOUNDATIONS (ELR) (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**
	Semester Three		
!	BSCI 30140	CELL BIOLOGY	4
!	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
!	MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
!	Biology Elective or Biology, Chemistry, Physics Elective		3
		Credit Hours	**16**
	Semester Four		
!	BSCI 30156	ELEMENTS OF GENETICS	3
	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
	CHEM 20482 or CHEM 30475 or CHEM 30482	BASIC ORGANIC CHEMISTRY II or ORGANIC CHEMISTRY LABORATORY I (ELR) or ORGANIC CHEMISTRY II	0-3
	Kent Core Requirement		3
	Kent Core Requirement		3
	General Elective		2
		Credit Hours	**14**
	Semester Five		
	Biology Electives or Biology, Chemistry, Physics Electives		9
	Foreign Language		4
	Kent Core Requirement		3
		Credit Hours	**16**
	Semester Six		
	BSCI 40158	MOLECULAR BIOLOGY	3
	Biology Electives or Biology, Chemistry, Physics Electives		8
	Foreign Language		4
		Credit Hours	**15**
	Semester Seven		
	BSCI 40163	EVOLUTION	3
	BSCI 40600	WRITING IN THE BIOLOGICAL SCIENCES (WIC)	1
	Biology Electives or Biology, Chemistry, Physics Electives		8
	General Elective		2
		Credit Hours	**14**
	Semester Eight		
	Biology Elective or Biology, Chemistry, Physics Elective		3
	General Electives		11
		Credit Hours	**14**
		Minimum Total Credit Hours:	**120**

Organismal Biology Concentration

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		**Credits**
!	BSCI 10110	BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)	4
!	CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
!	CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
	UC 10001	FLASHES 101	1
	Kent Core Requirement		3
	Kent Core Requirement		3
		Credit Hours	**16**
	Semester Two		
!	BSCI 10120	BIOLOGICAL FOUNDATIONS (ELR) (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**
	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
	Biology Electives or Biology, Chemistry, Physics Electives		4
	Organismal Core Electives		4
	Kent Core Requirement		3
		Credit Hours	**15**
	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 (ELR) or ORGANIC CHEMISTRY II	0-3
!	MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
	Kent Core Requirement		3

	Kent Core Requirement		3
		Credit Hours	**14**
	Semester Five		
	Biology Electives or Biology, Chemistry, Physics Electives		9
	Organismal Core Elective		3-4
	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 Electives or Biology, Chemistry, Physics Electives		7
	Foreign Language		4
		Credit Hours	**14**
	Semester Seven		
	BSCI 40163	EVOLUTION	3
	BSCI 40600	WRITING IN THE BIOLOGICAL SCIENCES (WIC)	1
	Biology Electives or Biology, Chemistry, Physics Electives		7
	General Elective		3
		Credit Hours	**14**
	Semester Eight		
	Biology Elective or Biology, Chemistry, Physics Elective		3
	General Electives		13
		Credit Hours	**16**
		Minimum Total Credit Hours:	**120**

Pre-Medicine/Pre-Podiatry/Pre-Dentistry Concentration

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		**Credits**
!	BSCI 10110	BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)	4
!	CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
!	CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
	PSYC 11762	GENERAL PSYCHOLOGY (DIVD) (KSS)	3
	UC 10001	FLASHES 101	1
	Kent Core Requirement		3
		Credit Hours	**16**
	Semester Two		
!	BSCI 10120	BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB)	4
!	CHEM 10061	GENERAL CHEMISTRY II (KBS)	4
!	CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
	SOC 12050	INTRODUCTION TO SOCIOLOGY (DIVD) (KSS)	3
	Kent Core Requirement		3
		Credit Hours	**15**
	Semester Three		
!	BSCI 30140	CELL BIOLOGY	4
	CHEM 20481 or CHEM 30481	BASIC ORGANIC CHEMISTRY I or ORGANIC CHEMISTRY I	3-4
	CHEM 30475	ORGANIC CHEMISTRY LABORATORY I (ELR)	1
!	MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
	Kent Core Requirement		3
		Credit Hours	**16**
	Semester Four		
!	BSCI 30105	CAREER PATHWAYS IN BIOLOGY	1
!	BSCI 30156	ELEMENTS OF GENETICS	3
	BSCI 40600	WRITING IN THE BIOLOGICAL SCIENCES (WIC)	1
	CHEM 20482 or CHEM 30482	BASIC ORGANIC CHEMISTRY II or ORGANIC CHEMISTRY II	2-3
	CHEM 30476	ORGANIC CHEMISTRY LABORATORY II	1
	MATH 12003 or MATH 30011	ANALYTIC GEOMETRY AND CALCULUS II or BASIC PROBABILITY AND STATISTICS	3-5
	Kent Core Requirement		3
		Credit Hours	**14**
	Semester Five		
!	BSCI 30130 or BSCI 40430	HUMAN PHYSIOLOGY or ANIMAL PHYSIOLOGY	3
	Biology (BSCI) Upper-Division Electives (30000 or 40000 level)		4
	Physics Electives		5
	Kent Core Requirement		3
		Credit Hours	**15**
	Semester Six		
!	BSCI 30171	GENERAL MICROBIOLOGY	4
	CHEM 30284 or CHEM 40245	INTRODUCTORY BIOLOGICAL CHEMISTRY or BIOCHEMICAL FOUNDATIONS OF MEDICINE	4
	Biology (BSCI) Upper-Division Elective (30000 or 40000 level)		3
	Physics Electives		5
		Credit Hours	**16**
	Semester Seven		
	BSCI 40163	EVOLUTION	3
	Biology (BSCI) Upper-Division Elective (30000 or 40000 level)		3
	Foreign Language		4
	General Electives		4
		Credit Hours	**14**
	Semester Eight		
	Biology (BSCI) Upper-Division Electives (30000 or 40000 level)		4
	Foreign Language		4
	General Electives		6
		Credit Hours	**14**
		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 the fundamental biological principles.
2. Acquire the 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 Biology is for students who are interested in pursuing an in-depth specialization as a biologist or wish to pursue a medical or healthcare career.

The Biology major comprises the following concentrations:

- The **Molecular and Cellular Biology** concentration is the study of biological processes within and between individual cells, allowing for a better understanding of biological principles in normal and diseased states. The focus of this program includes concepts related to the genetic basis of life, regulation of gene expression and cellular functions.
- The **Organismal Biology** concentration allows students to examine organisms in their natural environment and address fundamental principles of survival and adaptation in discrete micro-environments and entire ecosystems. While basic concepts of biological and chemical functions are covered, the focus of this concentration is comprehensive aspects of the whole organism.
- The **Pre-Medicine/Pre-Podiatry/Pre-Dentistry** concentration prepares students for careers in medicine and healthcare. The curriculum provides the courses necessary for admission to advanced degree programs in healthcare and biomedical science professions.