

INTEGRATED SCIENCE - B.S.E.

College of Education and Human Services
School of Teaching, Learning and Curriculum Studies
www.kent.edu/ehhs/tlcs

About This Program

The Bachelor of Science in Education in Integrated Science prepares you to teach science to middle and high school students through a multidisciplinary approach. With a curriculum that combines biology, chemistry, physics and earth science, you'll be equipped to create engaging and effective lesson plans. 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*

Agricultural sciences teachers, postsecondary

- 2.1% slower than the average
- 11,400 number of jobs
- \$90,340 potential earnings

Atmospheric, earth, marine, and space sciences teachers, postsecondary

- 1.9% slower than the average
- 13,100 number of jobs
- \$94,520 potential earnings

Biological science teachers, postsecondary

- 9.3% much faster than the average
- 64,700 number of jobs
- \$85,600 potential earnings

Chemistry teachers, postsecondary

- 4.3% about as fast as the average
- 26,400 number of jobs
- \$80,400 potential earnings

Education teachers, postsecondary

- 4.8% about as fast as the average
- 77,300 number of jobs
- \$65,440 potential earnings

Environmental science teachers, postsecondary

- 3.7% about as fast as the average
- 7,600 number of jobs
- \$84,740 potential earnings

Forestry and conservation science teachers, postsecondary

- 2.2% slower than the average
- 2,100 number of jobs
- \$87,400 potential earnings

Middle school teachers, except special and career/technical education

- 3.6% about as fast as the average
- 627,100 number of jobs
- \$60,810 potential earnings

Physics teachers, postsecondary

- 4.4% about as fast as the average
- 17,100 number of jobs
- \$90,400 potential earnings

Secondary school teachers, except special and career/technical education

- 3.8% about as fast as the average
- 1,050,800 number of jobs
- \$62,870 potential earnings

Accreditation

Council for the Accreditation of Educator Preparation

* 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) (min C grade required in all courses)		
BSCI 10110	BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)	4
BSCI 10120	BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB)	4
BSCI 30140	CELL BIOLOGY	4
BSCI 30156	ELEMENTS OF GENETICS	3
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	4
ESCI 11040	HOW THE EARTH WORKS (KBS)	3
ESCI 11041	HOW THE EARTH WORKS LABORATORY (KBS) (KLAB)	1
ESCI 11042	EARTH AND LIFE THROUGH TIME (KBS)	3
ESCI 11043	EARTH AND LIFE THROUGH TIME LABORATORY (KBS) (KLAB)	1
PHY 21430	FRONTIERS IN ASTRONOMY (KBS)	3
Additional Requirements (courses do not count in major GPA)		
ADED 15000	EXPLORING ADOLESCENT EDUCATION	3
ADED 20000	TOPICS IN SOCIAL JUSTICE IN TEACHING AND LEARNING (min C grade) ¹	3
ADED 32142	PRINCIPLES OF TEACHING ADOLESCENTS (WIC) (min C grade) ¹	3
ADED 32277	TEACHING SCIENCE IN SECONDARY SCHOOLS (min C grade) ¹	3
ADED 42277	TOPICS IN SECONDARY SCHOOL SCIENCE TEACHING (min C grade)	3
ADED 42292	FIELD WORK PRACTICUM (ELR) (min C grade) ¹	3

ADED 42392	SECONDARY STUDENT TEACHING (ELR) ¹	9
ADED 47330	READING AND WRITING IN ADOLESCENCE/ADULTHOOD (min C grade)	3
ADED 49525	INQUIRY INTO PROFESSIONAL PRACTICE (min C grade)	3
CULT 29535	EDUCATION IN A DEMOCRATIC SOCIETY (min C grade)	3
EPSY 29525	EDUCATIONAL PSYCHOLOGY (min C grade)	3
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
MATH 11022	TRIGONOMETRY (KMCR)	3
SPED 23000	INTRODUCTION TO EXCEPTIONALITIES (min C grade)	3
UC 10001	FLASHES 101	1
American Civic Literacy Requirement ²		3
Kent Core Composition		6
Kent Core Humanities and Fine Arts (minimum one course from each) ²		6-9
Kent Core Social Sciences (must be from two disciplines) ²		3-6
Concentrations		
Choose from the following:		21-28
Chemistry		
Earth Science		
Life Science		
Physics		
Minimum Total Credit Hours:		131-138

¹ Teacher candidates are only permitted to repeat a field experience course once. Please see Repeating Field Experience Courses in Teacher Education Programs policy for details.

² If students complete the American Civic Literacy requirement by taking HIST 12061, the course will apply to the Kent Core Humanities category. If they complete it with POL 10101, the course will apply to the Kent Core Social Sciences category.

Chemistry Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA; min C grade required in all courses)		
CHEM 30105	ANALYTICAL CHEMISTRY I	3
CHEM 30284	INTRODUCTORY BIOLOGICAL CHEMISTRY	4
CHEM 30301	INORGANIC CHEMISTRY I	3
CHEM 30475	ORGANIC CHEMISTRY LABORATORY I (ELR)	1
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13002	GENERAL COLLEGE PHYSICS II (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
Minimum Total Credit Hours:		21

Earth Science Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA; min C grade required in all courses)		
ESCI 21080	ALL ABOUT THE OCEANS (KBS)	3
ESCI 23063	EARTH MATERIALS I	4

ESCI 31070	EARTH MATERIALS II (WIC)	4
or ESCI 32066	GEOMORPHOLOGY	
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13002	GENERAL COLLEGE PHYSICS II (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
Minimum Total Credit Hours:		21

Life Science Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA; min C grade required in all courses)		
BSCI 21010	ANATOMY AND PHYSIOLOGY I (KBS) (KLAB)	4
BSCI 40163	EVOLUTION	3
CHEM 30284	INTRODUCTORY BIOLOGICAL CHEMISTRY	4
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13002	GENERAL COLLEGE PHYSICS II (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
Minimum Total Credit Hours:		21

Physics Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA; min C grade required in all courses)		
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II	5
PHY 23101	GENERAL UNIVERSITY PHYSICS I (KBS) (KLAB)	5
PHY 23102	GENERAL UNIVERSITY PHYSICS II (KBS) (KLAB)	5
PHY 30020	INTERMEDIATE PHYSICS LABORATORY (WIC)	2
PHY 32511	ELECTRONICS	3-4
or PHY 36002	APPLICATIONS OF MODERN PHYSICS	
PHY 36001	INTRODUCTORY MODERN PHYSICS	3
Minimum Total Credit Hours:		28

Progression Requirements

Students must meet all professional requirements for admission to advanced study. To be admitted, students must display evidence of the following:

- Adequate communication skills
- Sound content area knowledge (language arts, mathematics, science or social studies)
- Basic understanding of the teaching profession
- Basic understanding of adolescents
- Dispositions aligned with the conceptual framework of the College of Education, Health and Human Services, including being open-minded, flexible, caring and responsible

Faculty will select the most qualified applicants based on an interview; letters of recommendation, GPA¹, and performance in English coursework.

Applicants to the Integrated Science major must have experience working with young adults in a supervisory capacity, such as tutoring, camp counseling, volunteer work or related experience. Students should contact the College of Education, Health and Human Services' Vacca Office of Student Services, 304 White Hall, during the first year of study to inquire about the procedures and criteria associated with advanced study.

¹ Undergraduate students who have not completed a minimum of 12 Kent State University credit hours will be evaluated for advanced study and professional phase based on their high school GPA for new students or transfer GPA for transfer students.

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.600	2.750

Double Majors/Dual Degrees

Students seeking to declare an additional teacher education major in the B.S.E. degree (double major), or in a different degree (dual degree) may have the double major/dual degree approved as long as the following requirements are met:

1. Approval is received from the academic unit administrating each major. A program of study for those interested in pursuing a double major must be approved in writing by faculty from each major area prior to admission to advanced study.
2. All required content courses are completed for each major
3. All required methods courses are completed for each major.
4. Separate practicum and inquiry courses are completed for each major as listed below:
 - a. ADED 42292 (or the equivalent required by the major outside the college)
 - b. ADED 49525 (or the equivalent required by the major outside the college)
5. Students who have two majors from among the following only need to take ADED 42392, consisting of a 16-week classroom experience involving both subject areas: Life Sciences, Earth Science, Physical Sciences, Integrated Science, Integrated Mathematics, Life Science/Chemistry, Integrated Social Studies and/or Integrated Language Arts.
6. Students who have a second major not included in the list above (#5) will have their student teaching requirements determined by faculty from both program areas at the time the program of study is developed, with a minimum 16 weeks spent in the classroom.

Licensure information

Candidates seeking Ohio licensure are required to pass specific assessments in order to apply for licensure. See Ohio Department of Education-Educator Preparation website for more information on assessments specific to licensure type. Taking and passing the licensure tests prior to graduation is encouraged but not required.

Students must apply for State of Ohio Licensure (defined by completion of all licensure program requirements) within 12 months of program completion. After 12 months, applicants must meet State approved

program/licensure requirements that are in effect at the time of application. This means that students who apply after the 12 month deadline may have to take additional coursework if the content, methods courses, program requirements, or licensure requirements have changed from the catalog in force.

Roadmaps

Chemistry Concentration

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 10120	BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB)	4
CULT 29535	EDUCATION IN A DEMOCRATIC SOCIETY	3
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
UC 10001	FLASHES 101	1
Kent Core Requirement		3
Kent Core Requirement		3
Credit Hours		17
Semester Two		Credits
ADED 15000	EXPLORING ADOLESCENT EDUCATION	3
! BSCI 10110	BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)	4
EPSY 29525	EDUCATIONAL PSYCHOLOGY	3
MATH 11022	TRIGONOMETRY (KMCR)	3
Kent Core Requirement		3
Credit Hours		16
Semester Three		Credits
ADED 20000	TOPICS IN SOCIAL JUSTICE IN TEACHING AND LEARNING	3
! CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
! CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
ESCI 11040	HOW THE EARTH WORKS (KBS)	3
ESCI 11041	HOW THE EARTH WORKS LABORATORY (KBS) (KLAB)	1
Kent Core Requirement		3
Credit Hours		15
Semester Four		Credits
BSCI 30156	ELEMENTS OF GENETICS	3
! CHEM 10061	GENERAL CHEMISTRY II (KBS)	4
! CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
ESCI 11042	EARTH AND LIFE THROUGH TIME (KBS)	3
ESCI 11043	EARTH AND LIFE THROUGH TIME LABORATORY (KBS) (KLAB)	1
American Civic Literacy Requirement		3
Kent Core Requirement		3
Credit Hours		18
Semester Five		Credits
Requirement: minimum 2.750 overall GPA required by end of term and minimum 2.600 major GPA		
ADED 32142	PRINCIPLES OF TEACHING ADOLESCENTS (WIC)	3
BSCI 30140	CELL BIOLOGY	4
CHEM 20481	BASIC ORGANIC CHEMISTRY I	4
CHEM 30475	ORGANIC CHEMISTRY LABORATORY I (ELR)	1

PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
Credit Hours		17
Semester Six		Credits
Requirement: minimum 2.750 overall GPA required by end of term and minimum 2.600 major GPA		
ADED 32277	TEACHING SCIENCE IN SECONDARY SCHOOLS	3
CHEM 30284	INTRODUCTORY BIOLOGICAL CHEMISTRY	4
CHEM 30301	INORGANIC CHEMISTRY I	3
PHY 13002	GENERAL COLLEGE PHYSICS II (KBS)	4
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
Kent Core Requirement		3
Credit Hours		18
Semester Seven		Credits
Requirement: minimum 2.750 overall GPA and minimum 2.600 major GPA		
ADED 42277	TOPICS IN SECONDARY SCHOOL SCIENCE TEACHING	3
ADED 42292	FIELD WORK PRACTICUM (ELR)	3
ADED 47330	READING AND WRITING IN ADOLESCENCE/ADULTHOOD	3
CHEM 30105	ANALYTICAL CHEMISTRY I	3
PHY 21430	FRONTIERS IN ASTRONOMY (KBS)	3
SPED 23000	INTRODUCTION TO EXCEPTIONALITIES	3
Credit Hours		18
Semester Eight		Credits
Requirement: minimum 2.750 overall GPA and minimum 2.600 major GPA		
ADED 42392	SECONDARY STUDENT TEACHING (ELR)	9
ADED 49525	INQUIRY INTO PROFESSIONAL PRACTICE	3
Credit Hours		12
Minimum Total Credit Hours:		131

Earth Science Concentration

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
CULT 29535	EDUCATION IN A DEMOCRATIC SOCIETY	3
ESCI 11040	HOW THE EARTH WORKS (KBS)	3
ESCI 11041	HOW THE EARTH WORKS LABORATORY (KBS) (KLAB)	1
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
UC 10001	FLASHES 101	1
Kent Core Requirement		3
Credit Hours		18
Semester Two		Credits
ADED 15000	EXPLORING ADOLESCENT EDUCATION	3
EPSY 29525	EDUCATIONAL PSYCHOLOGY	3
ESCI 11042	EARTH AND LIFE THROUGH TIME (KBS)	3
ESCI 11043	EARTH AND LIFE THROUGH TIME LABORATORY (KBS) (KLAB)	1
MATH 11022	TRIGONOMETRY (KMCR)	3

Kent Core Requirement		3
Credit Hours		16
Semester Three		
BSCI 10120	BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB)	4
! CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
! CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
ESCI 21080	ALL ABOUT THE OCEANS (KBS)	3
Kent Core Requirement		3
Kent Core Requirement		3
Credit Hours		18
Semester Four		
ADED 20000	TOPICS IN SOCIAL JUSTICE IN TEACHING AND LEARNING	3
BSCI 30140	CELL BIOLOGY	4
! CHEM 10061	GENERAL CHEMISTRY II (KBS)	4
! CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
American Civic Literacy Requirement		3
Kent Core Requirement		3
Credit Hours		18
Semester Five		
Requirement: minimum 2.750 overall GPA required by end of term and minimum 2.600 major GPA		
ADED 32142	PRINCIPLES OF TEACHING ADOLESCENTS (WIC)	3
CHEM 20481	BASIC ORGANIC CHEMISTRY I	4
ESCI 23063	EARTH MATERIALS I	4
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
Credit Hours		16
Semester Six		
Requirement: minimum 2.750 overall GPA and minimum 2.600 major GPA		
ADED 32277	TEACHING SCIENCE IN SECONDARY SCHOOLS	3
BSCI 30156	ELEMENTS OF GENETICS	3
ESCI 31070	EARTH MATERIALS II (WIC) or GEOMORPHOLOGY	4
or ESCI 32066		
PHY 13002	GENERAL COLLEGE PHYSICS II (KBS)	4
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
Kent Core Requirement		3
Credit Hours		18
Semester Seven		
Requirement: minimum 2.750 overall GPA and minimum 2.600 major GPA		
ADED 42277	TOPICS IN SECONDARY SCHOOL SCIENCE TEACHING	3
ADED 42292	FIELD WORK PRACTICUM (ELR)	3
ADED 47330	READING AND WRITING IN ADOLESCENCE/ADULTHOOD	3
SPED 23000	INTRODUCTION TO EXCEPTIONALITIES	3
PHY 21430	FRONTIERS IN ASTRONOMY (KBS)	3
Credit Hours		15
Semester Eight		
Requirement: minimum 2.750 overall GPA and minimum 2.600 major GPA		

ADED 42392	SECONDARY STUDENT TEACHING (ELR)	9
ADED 49525	INQUIRY INTO PROFESSIONAL PRACTICE	3
Credit Hours		12
Minimum Total Credit Hours:		131

Life Science Concentration

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 10120	BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB)		4
CULT 29535	EDUCATION IN A DEMOCRATIC SOCIETY		3
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)		3
UC 10001	FLASHES 101		1
Kent Core Requirement			3
Kent Core Requirement			3
Credit Hours			17
Semester Two			
ADED 15000	EXPLORING ADOLESCENT EDUCATION		3
! BSCI 10110	BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)		4
EPSY 29525	EDUCATIONAL PSYCHOLOGY		3
MATH 11022	TRIGONOMETRY (KMCR)		3
Kent Core Requirement			3
Credit Hours			16
Semester Three			
BSCI 30140	CELL BIOLOGY		4
! CHEM 10060	GENERAL CHEMISTRY I (KBS)		4
! CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)		1
Kent Core Requirement			3
Kent Core Requirement			3
Kent Core Requirement			3
Credit Hours			18
Semester Four			
ADED 20000	TOPICS IN SOCIAL JUSTICE IN TEACHING AND LEARNING		3
BSCI 30156	ELEMENTS OF GENETICS		3
! CHEM 10061	GENERAL CHEMISTRY II (KBS)		4
! CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)		1
SPED 23000	INTRODUCTION TO EXCEPTIONALITIES		3
American Civic Literacy Requirement			3
Credit Hours			17
Semester Five			
Requirement: minimum 2.750 overall GPA required by end of term and minimum 2.600 major GPA			
ADED 32142	PRINCIPLES OF TEACHING ADOLESCENTS (WIC)		3
CHEM 20481	BASIC ORGANIC CHEMISTRY I		4
ESCI 11040	HOW THE EARTH WORKS (KBS)		3
ESCI 11041	HOW THE EARTH WORKS LABORATORY (KBS) (KLAB)		1
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)		4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)		1
Credit Hours			16

Semester Six

Requirement: minimum 2.750 overall GPA and minimum 2.600 major GPA

ADED 32277	TEACHING SCIENCE IN SECONDARY SCHOOLS	3
BSCI 40163	EVOLUTION	3
CHEM 30284	INTRODUCTORY BIOLOGICAL CHEMISTRY	4
PHY 13002	GENERAL COLLEGE PHYSICS II (KBS)	4
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
PHY 21430	FRONTIERS IN ASTRONOMY (KBS)	3
Credit Hours		18

Semester Seven

Requirement: minimum 2.750 overall GPA and minimum 2.600 major GPA

ADED 42277	TOPICS IN SECONDARY SCHOOL SCIENCE TEACHING	3
ADED 42292	FIELD WORK PRACTICUM (ELR)	3
ADED 47330	READING AND WRITING IN ADOLESCENCE/ADULTHOOD	3
BSCI 21010	ANATOMY AND PHYSIOLOGY I (KBS) (KLAB)	4
ESCI 11043	EARTH AND LIFE THROUGH TIME LABORATORY (KBS) (KLAB)	1
ESCI 11042	EARTH AND LIFE THROUGH TIME (KBS)	3
Credit Hours		17

Semester Eight

Requirement: minimum 2.750 overall GPA and minimum 2.600 major GPA

ADED 49525	INQUIRY INTO PROFESSIONAL PRACTICE	3
ADED 42392	SECONDARY STUDENT TEACHING (ELR)	9
Credit Hours		12

Minimum Total Credit Hours: 131**Physics Concentration**

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**

CHEM 10060	GENERAL CHEMISTRY I (KBS)	4
CHEM 10062	GENERAL CHEMISTRY I LABORATORY (KBS) (KLAB)	1
CULT 29535	EDUCATION IN A DEMOCRATIC SOCIETY	3
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
SPED 23000	INTRODUCTION TO EXCEPTIONALITIES	3
UC 10001	FLASHES 101	1
Kent Core Requirement		3
Credit Hours		18

Semester Two

ADED 15000	EXPLORING ADOLESCENT EDUCATION	3
BSCI 10120	BIOLOGICAL FOUNDATIONS (ELR) (KBS) (KLAB)	4
CHEM 10061	GENERAL CHEMISTRY II (KBS)	4
CHEM 10063	GENERAL CHEMISTRY II LABORATORY (KBS) (KLAB)	1
MATH 11022	TRIGONOMETRY (KMCR)	3
Kent Core Requirement		3
Credit Hours		18

Semester Three

BSCI 10110	BIOLOGICAL DIVERSITY (ELR) (KBS) (KLAB)	4
CHEM 20481	BASIC ORGANIC CHEMISTRY I	4
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
! PHY 23101	GENERAL UNIVERSITY PHYSICS I (KBS) (KLAB)	5

Credit Hours 18**Semester Four**

ADED 20000	TOPICS IN SOCIAL JUSTICE IN TEACHING AND LEARNING	3
ESCI 11042	EARTH AND LIFE THROUGH TIME (KBS)	3
ESCI 11043	EARTH AND LIFE THROUGH TIME LABORATORY (KBS) (KLAB)	1
! MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II	5
! PHY 23102	GENERAL UNIVERSITY PHYSICS II (KBS) (KLAB)	5

Credit Hours 17**Semester Five**

Requirement: minimum 2.750 overall GPA required by end of term and minimum 2.600 major GPA

ADED 32142	PRINCIPLES OF TEACHING ADOLESCENTS (WIC)	3
EPSY 29525	EDUCATIONAL PSYCHOLOGY	3
PHY 21430	FRONTIERS IN ASTRONOMY (KBS)	3
American Civic Literacy Requirement		3
Kent Core Requirement		3
Kent Core Requirement		3

Credit Hours 18**Semester Six**

Requirement: minimum 2.750 overall GPA and minimum 2.600 major GPA

ADED 32277	TEACHING SCIENCE IN SECONDARY SCHOOLS	3
BSCI 30140	CELL BIOLOGY	4
BSCI 30156	ELEMENTS OF GENETICS	3
PHY 36001	INTRODUCTORY MODERN PHYSICS	3
PHY 30020	INTERMEDIATE PHYSICS LABORATORY (WIC)	2
Kent Core Requirement		3

Credit Hours 18**Semester Seven**

Requirement: minimum 2.750 overall GPA and minimum 2.600 major GPA

ADED 42277	TOPICS IN SECONDARY SCHOOL SCIENCE TEACHING	3
ADED 42292	FIELD WORK PRACTICUM (ELR)	3
ADED 47330	READING AND WRITING IN ADOLESCENCE/ADULTHOOD	3
ESCI 11040	HOW THE EARTH WORKS (KBS)	3
ESCI 11041	HOW THE EARTH WORKS LABORATORY (KBS) (KLAB)	1
PHY 32511	ELECTRONICS	3-4
or	or APPLICATIONS OF MODERN PHYSICS	
PHY 36002		

Credit Hours 16**Semester Eight**

Requirement: minimum 2.750 overall GPA and minimum 2.600 major GPA

ADED 42392	SECONDARY STUDENT TEACHING (ELR)	9
ADED 49525	INQUIRY INTO PROFESSIONAL PRACTICE	3

Kent Core Requirement	3
Credit Hours	15
Minimum Total Credit Hours:	138

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.	
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 (KCOMP)	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. Plan multiple lessons using a variety of inquiry approaches that demonstrate their knowledge and understanding of how to engage all students in learning science.
2. Plan a learning environment and learning experiences for all students that demonstrate chemical safety, safety procedures and the ethical treatment of living organisms within their licensure area.
3. Plan fair and equitable assessment strategies to analyze student learning and to evaluate if the science learning goals are met.

Admission GPA for Undergraduate Students

For admissions, the College of Education, Health and Human Services considers a student to have established a Kent State University GPA after the student has successfully completed a minimum of 12 Kent State

University credit hours. Undergraduate students who have not completed a minimum of 12 Kent State University credit hours will be evaluated for admission into programs, Advanced Study, and the Professional phase based on their high school GPA for new freshmen, or transfer GPA for transfer students. Once a student has successfully completed a minimum of 12 Kent State University credit hours, only the student's Kent State cumulative GPA will be considered for admission into a program, Advanced Study, and Professional Phase.

Students who have completed 12 or more credit hours of previous college-level coursework, either at Kent State University or at another accredited institution, need an overall GPA of 2.00 or higher to declare a College of Education, Health and Human Services majors, minors or certificates unless a higher minimum GPA is specified by the program. See specific programs in this catalog for more information on required minimum GPA to declare. Non-degree EHHS General can be declared without a minimum 2.00 overall GPA.

Transfer applicants who have completed fewer than 12 semester hours of college-level coursework will be evaluated on both collegiate and high school records.

Background Checks for Teacher Licensure Candidates

For field experience, student teaching and any culminating internship in teacher education that requires candidates to be placed within a school or agency ("school/agency") setting, the college requires candidates to complete Bureau of Criminal Investigation and Identification (BCII) and Federal Bureau of Investigation (FBI) background checks and submit the results to authorized personnel at their assigned school/agency before the beginning of the field experience or the first day of the semester in which the student teaching/internship will take place. Authorized school/agency personnel will determine whether a candidate may participate in fieldwork in that setting. The BCII and FBI background checks are good for one year and are mandatory for licensure application. Electronic fingerprinting is available for BCII and FBI in 221 White Hall and should be completed at least two months prior to field experience/student teaching/culminating internship. Regional campus students should contact their Regional Campus coordinator to identify fingerprinting availability at each campus. Candidates are responsible for fees incurred for this requirement. For more information on this policy, contact the Director of Clinical Field Experience in 304 White Hall. Visit the Ohio Department of Education (ODE) website at www.ode.state.oh.us for more information about background check requirements for educators in Ohio. Contact the Office of Professional Conduct at the ODE for specific information about the results of the background check.

Education Licensure Application

Students in the teacher education programs must apply for State of Ohio Licensure within 12 months of program completion (defined by completion of all licensure program requirements). After 12 months, applicants must meet State approved program/licensure requirements that are in effect at the time of application. This means that students who apply after the 12 month deadline may have to take additional coursework if the content, methods courses, program requirements, or licensure requirements have changed from the catalog in force.

If a student does not apply for their license within 6 years, they are subject to any additional state licensure requirements and are also subject to additional coursework based on changes in areas such as content, age of coursework and changes in program requirements. A

minimum of 9 credit hours will be required to apply for licensure after 6 years of program completion.

Professional Dispositions for Teacher Candidates

Professional dispositions are the professional attitudes, values, and beliefs demonstrated through both verbal and non-verbal behaviors as educators interact with students, families, colleagues, faculty, and communities. The teacher education faculty believe that the following dispositions support student learning and development. Therefore teacher candidates are expected to demonstrate:

- Communication and Collaboration
- Fairness and Equity
- Ethical Behavior
- Professional Responsibility

These dispositions are assessed at least three times in a candidate's program:

- Education in a Democratic Society course,
- a methods course with a field component, and
- student teaching.

In addition, a disposition assessment may be completed by a faculty member at any time a situation calls for it. A disposition is considered 'acceptable' if a candidate does not have an outstanding Professional Disposition Plan (PDPs) that requires improved performance in specified areas. A candidate may not progress through the teacher education program if they have any PDPs submitted and unresolved at the following three points:

- Applying for advanced study: If a student has an outstanding PDP at the time of application, a student will not be able to apply for advanced study until the PDP is rectified.
- Prior to the student teaching semester: All outstanding PDPs must be completed and cleared prior to the start of student teaching.
- End of student teaching semester: A student with an outstanding PDP during the student teaching semester will not successfully pass student teaching.

Professional Education Warning

Professional Education Warning for students in teacher licensure programs and the Community Health Education major must have a minimum 2.75 GPA to progress in their programs and ultimately graduate. Unless other factors are present, students who do not meet the prescribed conditions are required to transfer out of their declared major. An appeal of this decision is directed to the associate dean of undergraduate student services, College of Education, Health and Human Services, 304 White Hall.

Repeating Field Experience Courses in Teacher Education Programs

Teacher candidates are permitted to repeat a field experience course once (see major requirements for specific courses). If a teacher candidate is unsuccessful in completing OR fails to earn the required grade in a field experience course the first time, the teacher candidate will receive a warning and will be required to work with a faculty advisor in their academic unit to develop a plan for continuation. The required grade is

a C or better in a course that awards a letter grade, or Satisfactory (S) in a course that awards an S/U grade. The plan will include all actions necessary to continue in current program, the opportunity to declare a different program, a timeline of when actions should occur, and next steps if actions are not followed. If the teacher candidate does not earn the required grade in the field experience course the second time, a hold will be placed on their account, preventing them from registering for classes until they change their major out of the education program.

Requirements for Admission to Advanced Study

Admission to advanced study is required of all teacher education initial licensure majors and minors prior to enrolling in courses designated as advanced study courses. Upon completion of coursework as determined by program area, students must apply during the term which all prerequisites for advanced study will be completed, and at least one semester prior to beginning any coursework for which "Admission to Advanced Study" is a prerequisite.

Application Dates

Fall Semester:

- Application window: August 1 to September 1
- Term to begin advanced study courses: Spring semester

Spring Semester:

- Application window: January 1 to February 1
- Term to begin advanced study courses: Summer term and/or fall semester

Summer Term:

- Application window: May 1 to June 1
- Term to begin advanced study courses: Fall semester

All students apply for Advanced Study through the College of Education, Health and Human Services Student Portal which can be accessed through the Vacca Office of Student Services web page.

Please note: Admission to advanced study is required for students pursuing an undergraduate major that leads to initial teacher licensure, with the exception of students in the Career Tech Teacher Education certificate who obtain initial licensure through the Alternative Resident Educator Licensure Program (teachers recruited from business and industry).

Requirements for Admission to Advanced Study

To deliver high-quality programs, faculty will select the most qualified applicants for admission based upon evaluation of academic success (overall GPA) at Kent State University, non-academic criteria and other specific program criteria.

Students may be required to reapply if they postpone advanced study coursework or withdraw from their courses for one year or more.

College Writing

- Students are required to attain minimum C grade in each writing course (ENG 11011 and ENG 21011 or equivalent) (Integrated Language Arts majors must attain minimum B grade).

Mathematics

- The following courses must be completed with minimum C grade for the majors Early Childhood Education, Middle Childhood Education and Special Education:
 - MATH 14001 (or equivalent)
 - MATH 14002
- The following courses must be completed with a minimum C grade for Integrated Mathematics majors:
 - MATH 12002
 - MATH 12003
- In addition, a minimum 2.600 overall GPA in math content coursework is required.

Pre-Advanced Study Coursework

- To be eligible for advanced study, students must earn a minimum C grade in CULT 29535 and minimum C grade in **one** of the following courses (i.e., both courses must be completed with a minimum C grade for graduation):
 - EPSY 29525 (note: Middle Childhood Education majors must earn a minimum C grade in this course to be eligible for Advanced Study)
 - SPED 23000
- Early Childhood Education majors must earn a minimum C grade in ECED 10120 to be eligible for advanced study.
- Middle Childhood Education majors must earn a minimum C grade in MCED 20000 to be eligible for advanced study.
- Middle Childhood Education majors must complete at least 50 percent of content area coursework from each concentration (minimum C grade) to be eligible for advanced study. Students should meet with their advisor.
- Adolescence/Young Adult Programs: majors must earn a minimum C grade in ADED 20000 to be eligible for Advanced Study.

Grade Point Average

All students must have a minimum 2.750 overall GPA, with additional conditions for the following majors:

- Adolescence/Young Adult Programs: A minimum 2.600 GPA in the chosen adolescence/young adult content area is required for admission to advanced study, student teaching and graduation. A minimum C grade is required in each course within the content area. The following majors are affected: Earth Science, Integrated Language Arts, Integrated Mathematics, Integrated Science, Integrated Social Studies, Life Science, Life Science/Chemistry and Physical Science.
- For minimum GPA criteria for Art Education and Music Education, please see Requirements for Admission to Advanced Study for Art Education and Music Education in the College Policies section for the College of the Arts in the University Catalog.
- Education Minor: Students in a program eligible to declare the Education minor must achieve a minimum 2.500 overall and a content GPA to declare the Education minor, be admitted to advanced study, participate in student teaching and be recommended for licensure.

All GPA requirements must be met at the time of application.

Disposition Assessment/Professional Disposition Plans (PDPs)

Students are required to have completed all professional dispositions plan (PDPs) at the time of application to be eligible for advanced study.

Teacher Candidate Acknowledgments and Legal Questions for Licensure

Candidates are required to electronically sign five statements acknowledging that they have read and understand the following areas: pre-service teacher permit / background check requirements, professional dispositions, licensure application information, legal questions asked on the licensure application, and teacher education handbook information. Statements can be found on the student portal.

Student Teaching

The application for student teaching is completed online through the College of Education, Health and Human Services' student portal. Students will be required to complete the application during specified windows posted on the Vacca Office of Student Services' (VOSS) website. Application windows will typically be accessible during the months of October and November in the fall semester and March and April in the spring semester. Failure to complete the application and submit the prerequisite training documents within the designated time frame may delay the student teaching placement. Depending on the program area, students will apply either 2 or 3 semesters prior to their anticipated student teaching semester. Students should meet with their academic advisor for details on which semester to apply.

Once the application is submitted, VOSS staff (or appropriate regional campus staff) will determine eligibility by reviewing coursework, GPA, disposition assessments, and other program area requirements. Specifically, staff will review the following:

- Coursework – aside from student teaching and inquiry seminar, all coursework in the program of study must be completed with the minimum grade required in each course (i.e., a 'C' or higher in a course where the program requirements prescribe a minimum grade of C).
- GPA – confirmation that the applicant has a 2.75 cumulative GPA or higher and meets the minimum major GPA required for their program as listed in the university catalog.
- Disposition Assessments – no outstanding Professional Disposition Plans (PDPs) are permitted. An applicant with an outstanding PDP must have it cleared before beginning student teaching.
- Program Area Requirements – applicant must have completed all program requirements for their major that are outlined and specified in the university catalog.

Students should meet with their faculty and/or academic advisor in VOSS for any clarifications. Written notification of eligibility will be emailed to each applicant.

Those eligible for student teaching are required to attend a mandatory meeting where additional information about student teaching is provided. Failure to attend this meeting may result in a delay of student teaching. Placement forms, distributed at this meeting, need to be completed by the deadline.

The Clinical Experience Office will make the final decision about the placement site for the Kent Campus. Placement decisions at the Regional Campuses are made by the designated placement officer at each campus. Candidates are not to contact schools or potential mentors directly to make their own arrangements. Placements are generally made within a 50 mile radius of Kent State University. Student teaching is a full-time commitment and candidates are expected to follow the schedule of the cooperating teacher.

Undergraduate Graduation Requirements

- Students declared in a teacher licensure major or minor must earn a minimum C grade in all major/minor and professional coursework.
- Students declared in the Education minor must earn minimum 2.500 content GPA.
- Students may apply a maximum 4 credit hours of Physical Activity, Wellness and Sport (PWS) courses toward their degree.
- Students may apply a maximum of 4 credit hours of variable-titled workshop (xxx93) toward an undergraduate degree. Identical workshop topics that are repeated for credit will not count towards graduation requirements. All workshops are graded S/U (satisfactory/unsatisfactory). Some program areas may be more restrictive. Students are advised to consult their program regarding application of workshop credit toward degree requirements.

To see graduation requirements for a specific program, please select a major from the undergraduate program listing.

Full Description

The Bachelor of Science in Education degree in Integrated Science is a four-year degree that prepares students for licensure in all areas of science, grades 7-12. Students take a broad range of science-content courses in earth science, geography, biology, chemistry and physics, and choose one area in which to specialize. Students complete most of their content coursework during their first three years and then begin their methods coursework during the spring of their third year. During the final year of the program, students complete remaining content courses, science teaching methods courses and a year-long placement in a local school district, which concludes with 13 weeks of student teaching in the spring. Integrated Science students are encouraged to meet with their advisor early in their program as many courses must be sequenced carefully.

Students are required to complete Bureau of Criminal Investigation and Identification (BCII) and Federal Bureau of Investigation (FBI) background checks.

Professional Licensure Disclosure

This program is designed to prepare students to sit for applicable licensure or certification in Ohio. If you plan to pursue licensure or certification in a state other than Ohio, please review state educational requirements for licensure or certification and contact information for state licensing boards at Kent State's website for professional licensure disclosure.