

INTEGRATED MATHEMATICS - B.S.E.

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

About This Program

The B.S.E. in Integrated Mathematics program prepares you for a successful career as a teacher. From middle school to high school, Kent State's B.S.E. in Integrated Mathematics has you covered. Read more...

Contact Information

- Program Coordinator: **Kristine E. Pytash, Ph.D.** | kpytash@kent.edu | 330-672-0641
- Speak with an Advisor
- Chat with an Admissions Counselor

Program Delivery

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

Examples of Possible Careers and Salaries*

Education teachers, postsecondary

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

Mathematical science teachers, postsecondary

- 1.3% slower than the average
- 60,100 number of jobs
- \$73,650 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

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

Admission to this major is selective. Admission to the college does not guarantee admission to a major and/or admission to professional coursework for a selective admission program. To be admitted directly into a teacher education program, it is required that new freshmen have a 2.750 high school GPA. Students who do not meet the GPA requirement at the time of admission for this major will be admitted to the EHHS General non-degree program until which time they have established a minimum 2.750 Kent State GPA. They may then submit a change of program to declare this major.

Current Kent State and Transfer Students: Active Kent State students who wish to change their major must have attempted a minimum 12 credit hours at Kent State and meet all admission criteria listed above to be admitted. Students who have not attempted 12 credit hours at Kent State will be evaluated for admission based on their high school GPA for new students or transfer GPA for transfer students. Transfer students who have not attempted 12 credit hours of college-level coursework at Kent State and/or other institutions will be evaluated based on both their high school GPA and college GPA.

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

Program Requirements

Code	Title	Credit Hours
Major Requirements (courses count in major GPA; min C grade required in all courses)		
ADED 33268	MATHEMATICAL MODELING FOR SECONDARY TEACHERS	3
CS 10051	COMPUTER SCIENCE PRINCIPLES (KMCR)	4
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II	5
MATH 21001	LINEAR ALGEBRA	3
MATH 22005	ANALYTIC GEOMETRY AND CALCULUS III	4
MATH 30011	BASIC PROBABILITY AND STATISTICS	3
MATH 31011	PROOFS IN DISCRETE MATHEMATICS	3
MATH 34001	FUNDAMENTAL CONCEPTS OF ALGEBRA	3
MATH 34002	FUNDAMENTAL CONCEPTS OF GEOMETRY	3
MATH 47021	HISTORY OF MATHEMATICS	3
Mathematics Electives, choose from the following:		9
MATH 32044	ORDINARY DIFFERENTIAL EQUATIONS	
MATH 38001	HANDS-ON MATHEMATICS	
MATH 40011	PROBABILITY THEORY AND APPLICATIONS	
MATH 40012	THEORY OF STATISTICS (WIC)	
MATH 41001	MODERN ALGEBRA I (ELR) (WIC)	
MATH 41002	MODERN ALGEBRA II (ELR) (WIC)	
MATH 41021	THEORY OF MATRICES	
MATH 42024	NUMBERS AND GAMES	
MATH 45021	EUCLIDEAN GEOMETRY	

MATH 45022	LINEAR GEOMETRY	
MATH 47011	THEORY OF NUMBERS	
Additional Requirements (courses do not count in major GPA)		
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 32268	THE SECONDARY SCHOOL MATHEMATICS CURRICULUM (min C grade)	3
ADED 42268	TEACHING OF MATHEMATICS IN SECONDARY SCHOOLS (min C grade)	3
ADED 42292	FIELD WORK PRACTICUM (ELR) (min C grade) ¹	3
ADED 42392	SECONDARY STUDENT TEACHING (ELR) ¹	9
ADED 49525	INQUIRY INTO PROFESSIONAL PRACTICE (min C grade)	3
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
CULT 29535	EDUCATION IN A DEMOCRATIC SOCIETY (min C grade)	3
EPSY 29525	EDUCATIONAL PSYCHOLOGY (min C grade)	3
ETEC 39525	EDUCATIONAL TECHNOLOGY (min C grade)	3
HED 42575	HEALTH AND LEARNING: STRATEGIES FOR STUDENTS AND TEACHERS (min C grade)	3
PSYC 11762	GENERAL PSYCHOLOGY (DIVD) (KSS)	3
SPED 23000	INTRODUCTION TO EXCEPTIONALITIES (DIVD) (min C grade)	3
UC 10001	FLASHES 101	1
Kent Core Composition (minimum C grade)		6
Kent Core Humanities and Fine Arts (minimum one course from each)		9
Kent Core Social Sciences (must be from two disciplines)		3
Kent Core Basic Sciences (must include one laboratory)		6-7
Minimum Total Credit Hours:		121

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.

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 and communication studies coursework. Applicants to the Integrated Mathematics 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 freshmen 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.

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.

Semester One		Credits
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
!	CULT 29535 EDUCATION IN A DEMOCRATIC SOCIETY	3
UC 10001	FLASHES 101	1
Kent Core Requirement		3
Kent Core Requirement		3
Kent Core Requirement		3
Credit Hours		16
Semester Two		Credits
!	MATH 12002 ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
PSYC 11762	GENERAL PSYCHOLOGY (DIVD) (KSS)	3
Kent Core Requirement		3
Kent Core Requirement		3
Kent Core Requirement		3
Credit Hours		17
Semester Three		Credits
Requirement: minimum 2.750 overall GPA by end of term; minimum 2.600 major GPA		
ADED 20000	TOPICS IN SOCIAL JUSTICE IN TEACHING AND LEARNING	3
ETEC 39525	EDUCATIONAL TECHNOLOGY	3
MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II	5
MATH 34001	FUNDAMENTAL CONCEPTS OF ALGEBRA	3
Kent Core Requirement		3
Credit Hours		17
Semester Four		Credits
Requirement: minimum 2.750 overall GPA by end of term; minimum 2.600 major GPA		
!	EPSY 29525 EDUCATIONAL PSYCHOLOGY	3
MATH 22005	ANALYTIC GEOMETRY AND CALCULUS III	4
MATH 30011	BASIC PROBABILITY AND STATISTICS	3
MATH 34002	FUNDAMENTAL CONCEPTS OF GEOMETRY	3
Kent Core Requirement		3
Credit Hours		16
Semester Five		Credits
Requirement: minimum 2.750 overall GPA by end of term; minimum 2.600 major GPA		
!	ADED 32142 PRINCIPLES OF TEACHING ADOLESCENTS (WIC)	3
!	CS 10051 COMPUTER SCIENCE PRINCIPLES (KMCR)	4
MATH 21001	LINEAR ALGEBRA	3
MATH 31011	PROOFS IN DISCRETE MATHEMATICS	3
SPED 23000	INTRODUCTION TO EXCEPTIONALITIES (DIVD)	3
Credit Hours		16
Semester Six		Credits
Requirement: minimum 2.750 overall GPA by end of term; minimum 2.600 major GPA		
!	ADED 32268 THE SECONDARY SCHOOL MATHEMATICS CURRICULUM	3
!	ADED 33268 MATHEMATICAL MODELING FOR SECONDARY TEACHERS	3
HED 42575	HEALTH AND LEARNING: STRATEGIES FOR STUDENTS AND TEACHERS	3

Mathematics Electives		6
Credit Hours		15
Semester Seven		Credits
Requirement: minimum 2.750 overall GPA by end of term; minimum 2.600 major GPA		
!	ADED 42268 TEACHING OF MATHEMATICS IN SECONDARY SCHOOLS	3
!	ADED 42292 FIELD WORK PRACTICUM (ELR)	3
MATH 47021	HISTORY OF MATHEMATICS	3
Mathematics Elective		3
Credit Hours		12
Semester Eight		Credits
Requirement: minimum 2.750 overall GPA by end of term; 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:		121

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. Successfully pass the Ohio Assessment Exam.
2. Demonstrate understanding of the content and pedagogy of required program courses.
3. Successfully plan three types of lesson plans: conceptual, procedural and relevance to teaching mathematics.
4. Successfully complete student teaching.
5. Create a unit plan in secondary mathematics.
6. Model five problems of antiquity in Desmos or Geogebra.

Full Description

The Bachelor of Science in Education degree in Integrated Mathematics prepares students for teacher licensure in grades 7-12. Students complete most of their content coursework during their first three years; methods coursework typically begins during the spring of their third year. During the final year of the program, candidates complete remaining content courses, mathematics teaching methods courses and a year-long placement in a local school district, which concludes with 13 weeks of student teaching in the spring.

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.