MATHEMATICS - B.A.

College of Arts and Sciences
Department of Mathematical Sciences
www.kent.edu/math

About This Program

The Mathematics B.A. program offers a broad range of courses in mathematics and related fields, allowing you to customize your degree to your interests. With experienced faculty and opportunities for hands-on learning, you'll be prepared for a variety of career paths. Read more...

Contact Information

- Program Coordinator: **Xiaoyu Zheng** | xzheng3@kent.edu | 330-672-9089
- Speak with an Advisor
  - Kent Campus
  - Stark Campus
- Chat with an Admissions Counselor: Kent Campus | Regional Campuses

Program Delivery

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

Examples of Possible Careers and Salaries*

Data scientists and mathematical science occupations, all other

- 30.9% much faster than the average
- 33,200 number of jobs
- $98,230 potential earnings

Mathematical science teachers, postsecondary

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

Mathematicians

- 3.0% about as fast as the average
- 2,900 number of jobs
- $110,860 potential earnings

Natural sciences managers

- 4.8% about as fast as the average
- 71,400 number of jobs
- $137,940 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

* 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. 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.

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 Coursework tab.

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements (courses count in major GPA) [1]		
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR) (min C grade)	5

MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II (min C grade)	5
MATH 20011	DECISION-MAKING UNDER UNCERTAINTY	3
MATH 21001	LINEAR ALGEBRA (min C grade)	3
MATH 22005	ANALYTIC GEOMETRY AND CALCULUS III (min C grade)	4
MATH 31011	PROOFS IN DISCRETE MATHEMATICS (min C grade)	3
MATH 41001	MODERN ALGEBRA I (ELR) (WIC) (min C grade in either course) [2]	3
or MATH 42001	ANALYSIS I (ELR) (WIC)	
MATH 41002	MODERN ALGEBRA II (ELR) (WIC) [2]	3
or MATH 42002	ANALYSIS II (ELR) (WIC)	
Mathematics Electives, choose from the following:		9
MATH 30055	MATHEMATICAL THEORY OF INTEREST	
MATH 32044	ORDINARY DIFFERENTIAL EQUATIONS	
MATH 38001	HANDS-ON MATHEMATICS	
MATH 40011	PROBABILITY THEORY AND APPLICATIONS	
MATH 40012	THEORY OF STATISTICS (WIC) [2]	
MATH 40015	APPLIED STATISTICS	
MATH 40024	COMPUTATIONAL STATISTICS	
MATH 40028	STATISTICAL LEARNING	
MATH 40051	TOPICS IN PROBABILITY THEORY AND STOCHASTIC PROCESSES	
MATH 40055	ACTUARIAL MATHEMATICS I (ELR) (WIC) [2]	
MATH 40056	ACTUARIAL MATHEMATICS II	
MATH 41001	MODERN ALGEBRA I (ELR) (WIC) [2]	
MATH 41002	MODERN ALGEBRA II (ELR) (WIC) [2]	
MATH 41021	THEORY OF MATRICES	
MATH 42001	ANALYSIS I (ELR) (WIC) [2]	
MATH 42002	ANALYSIS II (ELR) (WIC) [2]	
MATH 42011	MATHEMATICAL OPTIMIZATION	
MATH 42021	GRAPH THEORY AND COMBINATORICS	
MATH 42024	NUMBERS AND GAMES	
MATH 42031	MATHEMATICAL MODELS AND DYNAMICAL SYSTEMS	
MATH 42039	MODELING PROJECTS (ELR) (WIC) [2]	
MATH 42041	ADVANCED CALCULUS	
MATH 42045	PARTIAL DIFFERENTIAL EQUATIONS	
MATH 42048	COMPLEX VARIABLES	
MATH 42201	NUMERICAL COMPUTING I	
MATH 42202	NUMERICAL COMPUTING II	
MATH 45011	DIFFERENTIAL GEOMETRY	
MATH 45021	EUCLIDEAN GEOMETRY	
MATH 45022	LINEAR GEOMETRY	
MATH 46001	ELEMENTARY TOPOLOGY	
MATH 47011	THEORY OF NUMBERS	
MATH 47021	HISTORY OF MATHEMATICS	
Computer Programming Elective, choose from the following:		3-4
CS 10051	COMPUTER SCIENCE PRINCIPLES (KMCR)	
CS 10062	PROGRAMMING FOR PROBLEM SOLVING IN SCIENCES	
CS 13001	COMPUTER SCIENCE I: PROGRAMMING AND PROBLEM SOLVING	
CS 13011 & CS 13012	COMPUTER SCIENCE IA: PROCEDURAL PROGRAMMING and COMPUTER SCIENCE IB: OBJECT ORIENTED PROGRAMMING (min C grade in both courses)	
EMAT 25310	CREATIVE CODING	
Additional Requirements (courses do not count in major GPA)		
UC 10001	FLASHES 101	1
Foreign Language (see Foreign Language College Requirement below)		14-16
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 Basic Sciences (must include one laboratory)		6-7
Kent Core Additional		6
General Electives (total credit hours depends on earning 120 credits hour, including 39 upper-division credit hours)		31
Minimum Total Credit Hours:		**120**

1 MATH 30011, MATH 34001 and MATH 34002 may not be applied toward major requirements.

2 A minimum C grade must be earned to fulfill the writing-intensive requirement.

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.000	2.000

Foreign Language College Requirement, B.A.

Students pursuing the Bachelor of Arts degree in the College of Arts and Sciences must complete 14-16 credit hours of foreign language.[1] To complete the requirement, students need the equivalent of Elementary I and II in any language, plus one of the following options[2]:

1. Intermediate I and II of the same language
2. Elementary I and II of a second language
3. Any combination of two courses from the following list:

    - Intermediate I of the same language
    - ARAB 21401
    - ASL 19401
    - CHIN 25421
    - MCLS 10001
    - MCLS 20001
    - MCLS 20091
    - MCLS 21417
    - MCLS 21420
    - MCLS 22217
    - MCLS 28403
    - MCLS 28404

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 fewer 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 14 credit hours and four courses, they will complete remaining credit hours with general electives.

[2] Certain majors, concentrations and minors may require specific languages, limit the languages from which a student may choose or require coursework through Intermediate II. Students who plan to pursue graduate study may need particular language coursework.

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
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
UC 10001	FLASHES 101	1
Computer Programming Elective		3
Foreign Language		4
Kent Core Requirement		3
	Credit Hours	**16**
Semester Two		
MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II	5
Foreign Language		4
Kent Core Requirement		3
Kent Core Requirement		3
	Credit Hours	**15**
Semester Three		
MATH 22005	ANALYTIC GEOMETRY AND CALCULUS III	4
Foreign Language		3
Kent Core Requirement		3
Kent Core Requirement		3
General Elective		3
	Credit Hours	**16**
Semester Four		
MATH 20011	DECISION-MAKING UNDER UNCERTAINTY	3
Foreign Language		3
Kent Core Requirement		3
Kent Core Requirement		3
Kent Core Requirement		3
	Credit Hours	**15**
Semester Five		
MATH 21001	LINEAR ALGEBRA	3
MATH 31011	PROOFS IN DISCRETE MATHEMATICS	3
Kent Core Requirement		3
General Electives		6
	Credit Hours	**15**
Semester Six		
Mathematics Elective		3
Kent Core Requirement		3
Kent Core Requirement		3
General Electives		6
	Credit Hours	**15**
Semester Seven		
MATH 41001 or MATH 42001	MODERN ALGEBRA I (ELR) (WIC) or ANALYSIS I (ELR) (WIC)	3
Mathematics Elective		3
General Electives		9
	Credit Hours	**15**
Semester Eight		
MATH 41002 or MATH 42002	MODERN ALGEBRA II (ELR) (WIC) or ANALYSIS II (ELR) (WIC)	3
Mathematics Elective		3
General Electives		7
	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**

Full Description

The Bachelor of Arts degree in Mathematics is a flexible program, grounded in the liberal arts and suited for students' individual interests and needs. The program combines well with a second major and/or minors.