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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 12002</td>
<td>ANALYTIC GEOMETRY AND CALCULUS I (KMCR) (min C grade)</td>
<td>5</td>
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</tbody>
</table>
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)  2
or MATH 42001  ANALYSIS I (ELR) (WIC)  2
MATH 41002  MODERN ALGEBRA II (ELR) (WIC)  2
or MATH 42002  ANALYSIS II (ELR) (WIC)  2
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 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 Mathematic 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.
To complete the requirement, students need the equivalent of Elementary I and II in any language, plus one of the following options:

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.
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
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<td>UC 10001 FLASHES 101</td>
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<td>Foreign Language</td>
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<td>Kent Core Requirement</td>
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Semester Three
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<tr>
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Semester Six
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<td>MATH 41001 MODERN ALGEBRA I (ELR) (WIC)</td>
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<td>or MATH 42001</td>
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<tr>
<td>General Electives</td>
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Semester Eight
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<td>MATH 41002 MODERN ALGEBRA II (ELR) (WIC)</td>
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<tr>
<td>or MATH 42002</td>
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<td>Mathematics Elective</td>
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<td>General Electives</td>
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<td><strong>Credit Hours</strong></td>
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</tbody>
</table>

**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) 3
- Kent Core Social Sciences (KSS) (must be from two disciplines) 6
- Kent Core Basic Sciences (KBS/KLAB) (must include one laboratory) 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.