

MATHEMATICS - MINOR

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

About This Program

The Mathematics minor offers study in several areas of pure mathematics and can be combined with several majors, including those in the sciences and education.

Contact Information

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

Program Delivery

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

Admission Requirements

Admission to a minor is open to students declared in a bachelor's degree, the A.A.B. or A.A.S. degree or the A.T.S. degree (not Individualized Program major). Students declared only in the A.A. or A.S. degree or the A.T.S. degree in Individualized Program may not declare a minor. Students may not pursue a minor and a major in the same discipline.

Program Requirements

Minor Requirements

| Code | Title | Credit Hours |
|----------------------------------|--|--------------|
| Prerequisite Requirements | | |
| 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 | |
| Minor Requirements | | |
| MATH 12002 | ANALYTIC GEOMETRY AND CALCULUS I (KMCR) (min C grade) | 5 |
| MATH 12003 | ANALYTIC GEOMETRY AND CALCULUS II (min C grade) | 3-5 |
| or MATH 12013 | BRIEF CALCULUS II | |
| MATH 20011 | DECISION-MAKING UNDER UNCERTAINTY | 3-4 |
| or MATH 22005 | ANALYTIC GEOMETRY AND CALCULUS III | |

| | | |
|--|--|---|
| MATH 21001 | LINEAR ALGEBRA (min C grade) | 3 |
| or MATH 21002 | APPLIED LINEAR ALGEBRA | |
| MATH 23022 | DISCRETE STRUCTURES FOR COMPUTER SCIENCE | 3 |
| or MATH 31011 | PROOFS IN DISCRETE MATHEMATICS | |
| or MATH 32044 | ORDINARY DIFFERENTIAL EQUATIONS | |
| or Mathematics Upper-Division Course (MATH 40000 level) | | |
| Mathematics Electives, choose from the following: ¹ | | 6 |
| MATH 41001 | MODERN ALGEBRA I (ELR) (WIC) | |
| MATH 41002 | MODERN ALGEBRA II (ELR) (WIC) | |
| MATH 41021 | THEORY OF MATRICES | |
| MATH 42001 | ANALYSIS I (ELR) (WIC) | |
| MATH 42002 | ANALYSIS II (ELR) (WIC) | |
| MATH 42021 | GRAPH THEORY AND COMBINATORICS | |
| MATH 42041 | ADVANCED CALCULUS | |
| MATH 42045 | PARTIAL DIFFERENTIAL EQUATIONS | |
| MATH 42048 | COMPLEX VARIABLES | |
| MATH 45011 | DIFFERENTIAL GEOMETRY | |
| MATH 45021 | EUCLIDEAN GEOMETRY | |
| MATH 45022 | LINEAR GEOMETRY | |
| MATH 46001 | ELEMENTARY TOPOLOGY | |
| MATH 47011 | THEORY OF NUMBERS | |

Minimum Total Credit Hours: 23

¹ Students should select electives in consultation with the student's minor advisor.

Graduation Requirements

| Minimum Minor GPA | Minimum Overall GPA |
|-------------------|---------------------|
| 2.000 | 2.000 |

- Minimum 6 credit hours in the minor must be upper-division coursework (30000 and 40000 level).
- Minimum 6 credit hours in the minor must be outside of the course requirements for any major or other minor the student is pursuing.
- Minimum 50 percent of the total credit hours for the minor must be taken at Kent State (in residence).

Program Learning Outcomes

Graduates of this program will be able to:

1. Formulate, analyze and solve problems, logically and critically, in proper math settings.