MATHEMATICS - MINOR

College of Arts and Sciences
Department of Mathematical Sciences
233 Mathematics and Computer Science Building
Kent Campus
330-672-2430
math@math.kent.edu
www.kent.edu/math

Description
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.

Fully Offered At:
• 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. 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.

Minor Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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| Prerequisite Requirements
  MATH 10675 | ALGEBRA FOR CALCULUS BOOST (KMCR) or MATH 10775 ALGEBRA FOR CALCULUS PLUS (KMCR) or MATH 11010 ALGEBRA FOR CALCULUS (KMCR) |              |
  MATH 11022 | TRIGONOMETRY (KMCR)                                        |              |
  Computer Programming Elective, choose from the following:
  CS 10051 | INTRODUCTION TO COMPUTER SCIENCE (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 15310 | CREATIVE CODING                                           |              |

Minor Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MATH 12002</td>
<td>ANALYTIC GEOMETRY AND CALCULUS I (KMCR) (min C grade)</td>
<td>5</td>
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<tr>
<td>MATH 12003</td>
<td>ANALYTIC GEOMETRY AND CALCULUS II (min C grade)</td>
<td>5</td>
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<tr>
<td>MATH 21001</td>
<td>LINEAR ALGEBRA (min C grade)</td>
<td>3</td>
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<td>MATH 22005</td>
<td>ANALYTIC GEOMETRY AND CALCULUS III (min C grade)</td>
<td>4</td>
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<tr>
<td>or MATH 31011</td>
<td>PROOFS IN DISCRETE MATHEMATICS (min C grade)</td>
<td>3</td>
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<tr>
<td>or MATH 32044</td>
<td>ORDINARY DIFFERENTIAL EQUATIONS</td>
<td></td>
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<tr>
<td>or Mathematics Upper-Division Course (MATH 40000 level)</td>
<td>Mathematics Electives, choose from the following:</td>
<td>6</td>
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| Algebra
  MATH 41001 | MODERN ALGEBRA I (ELR) (WIC)                              |              |
  MATH 41002 | MODERN ALGEBRA II (ELR) (WIC)                             |              |
  MATH 41021 | THEORY OF MATRICES                                       |              |
  MATH 47011 | THEORY OF NUMBERS                                        |              |
| Analysis
  MATH 42001 | ANALYSIS I (ELR) (WIC)                                    |              |
  MATH 42002 | ANALYSIS II (ELR) (WIC)                                   |              |
  MATH 42041 | ADVANCED CALCULUS                                        |              |
  MATH 42045 | PARTIAL DIFFERENTIAL EQUATIONS                            |              |
  MATH 42048 | COMPLEX VARIABLES                                        |              |
| Geometry/Topology
  MATH 42021 | GRAPH THEORY AND COMBINATORICS                            |              |
  MATH 45011 | DIFFERENTIAL GEOMETRY                                     |              |
  MATH 45021 | EUCLIDEAN GEOMETRY                                        |              |
  MATH 45022 | LINEAR GEOMETRY                                           |              |
  MATH 46001 | ELEMENTARY TOPOLOGY                                       |              |

Minimum Total Credit Hours: 26

Graduation Requirements

<table>
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<tr>
<th>Minimum Minor GPA</th>
<th>Minimum Overall GPA</th>
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<td>2.000</td>
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• Students must complete at least two upper-division (30000 or 40000 level) courses in the minor at Kent State on a graded basis (A-F).
• 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).