There are many benefits to majoring or minorin in mathematics.
These include a wide variety of career opportunities and a relatively
high earning potential. Many employment opportunities for mathe-
maticians exist in government, industry and education. Moreover,
the options that are available in choosing between mathematics and
applied mathematics allow for a high degree of flexibility in designing
one's program of study. Students can choose from a large variety of
elective mathematics courses. In addition, students can pursue a dual
major such as mathematics and physics or incorporate a related minor,
such as computer science, into a math major. Students in areas such as
business, economics, finance and social sciences can greatly improve
their marketability by obtaining a minor in mathematics or applied
math. A minor in one of the mathematics areas is a particularly good
option for students majoring in the sciences.

The flexibility of our mathematics minor programs is illustrated by
the requirements for these minors. Excluding the basic, prerequisite
courses, minors in mathematics or applied mathematics consist of 18
credit hours or 21-22 credit hours, respectively. Approximately 9 of
these credit hours are devoted to elective courses.

While almost any mathematics degree will provide great benefits for
a student, studying mathematics at Kent State offers many advantages.
Professors regularly teach courses at all levels (entry level, upper
division and graduate). Most class sizes are small, and free tutoring is
available to all students throughout the afternoon and evening. Students
also have free access to many types of computer resources. In addition,
scholarships, student jobs and other forms of financial aid are available
to students majoring or minor in the mathematical sciences.

UNDERGRADUATE PROGRAMS
At Kent State, the primary concern is the student. The Department of
Mathematical Sciences reflects this concern through its efforts to provide
the academic atmosphere and close student-faculty associations which
encourage intellectual growth and development. Programs are designed
to broaden students' perspectives and to help them realize their
potential. Kent State offers courses in mathematics (pure and applied),
computer science, statistics and mathematics for teachers. A student
may concentrate in one area or combine coursework from several areas.
Programs allow a student to prepare for graduate study, for high school
teaching or for employment in industry.

An undergraduate specializing in mathematics will begin with calculus
and introduction to computing, although some students will require
college algebra and trigonometry. Well-prepared students are encour-
gaged to establish credit in elementary courses by passing advanced
standing examinations. All majors take courses in calculus, computer
science and linear algebra.

PREPARATION FOR A MATHEMATICS CAREER
Students interested in careers as mathematicians should pursue either
the mathematics or the applied mathematics degree program. The
mathematics program is strongly recommended for students considering
graduate study in mathematics. The applied mathematics program is
flexible and designed to suit the needs of students interested in a career
in industry, government or in postgraduate study in applied mathematics
or other scientific areas.

It is strongly recommended that all majors plan to take the Graduate
Record Examination (GRE) early in their senior year. This exam is a
requirement for almost all graduate programs. Taking the exam while
 coursework is fresh in one's memory will help keep options for
graduate work open.

PREPARATION FOR A TEACHING CAREER
Students interested in high school teaching may pursue either the
Bachelor of Science or Bachelor of Arts in the College of Arts and Sciences,
majoring in one of the mathematical sciences with a minor in education
or pursue the Bachelor of Science in Education, with a major or minor in
mathematics. Either of these programs leads to teacher licensure in the
state of Ohio.

A MINOR IN MATHEMATICS
For students interested in adolescence/young adult teacher licensure,
see reverse side for requirements for a major or minor in mathematics.
Computer science majors wishing to apply for admission and financial

CAREER OPPORTUNITIES
A degree in mathematics opens the door to a very wide
range of satisfying and lucrative career opportunities.
Many of these careers are consistently top-ranked in
annual job satisfaction surveys that take into account
key components including salary, work environment, job
stability and benefits. For example, a 2009 survey by the
Wall Street Journal found that the top three jobs among
the 200 they surveyed were: mathematician, actuary
and statistician. Each of those careers begins with a
mathematics degree (and several others in the top 10
also pair well with a math minor or double major).

The pamphlet, PROFESSIONAL OPPORTUNITIES IN
MATHEMATICS, available through the American
Mathematical Association, provides an excellent
summary of different types of jobs which use mathe-
matics, including approximate salaries and educational
requirements. The Kent State University Career Services
Center can provide students with many valuable resources.
They offer career counseling and a career exploration
course to help students find career goals, as well as help
with cover letters, résumés, portfolios and other tools for
finding employment. They can also help students find on-
and off-campus employment.
support to some of the most competitive graduate programs in computer science are strongly encouraged to obtain at least a minor, and preferably a major, in mathematics (pure or applied).

MINOR IN MATHEMATICS

General Mathematics Requirements:  Credits
MATH 12002 Analytic Geometry and Calculus I 5
12003 Analytic Geometry and Calculus II 5
21001 Linear Algebra with Applications 3
22005 Analytic Geometry and Calculus III 3

Choose from one of the three categories:  6

Algebra
MATH 41001 Introduction to Modern Algebra I (3)
41002 Introduction to Modern Algebra II (3)
41021 Theory of Matrices (3)
47011 Theory of Numbers (3)

Analysis
MATH 42001 Introduction to Analysis I (3)
42002 Introduction to Analysis II (3)
42045 Introduction to Partial Differential Equations (3)
42048 Introduction to Complex Variables (3)

Geometry/Topology
MATH 42021 Graph Theory and Combinatorics (3)
45011 Differential Geometry (3)
45021 Euclidean Geometry (3)
45022 Linear Geometry (3)
46001 Elementary Topology (3)

Elective: choose from the following in consultation with students’ minor advisor 3

MATH 3101 Discrete Mathematics (3)
32044 Introduction to Ordinary Differential Equations (3)
Mathematics 40000-level course (3)

TOTAL 25

MINOR IN ADOLESCENT/YOUNG ADULT EDUCATION

Candidates for either the Bachelor of Arts or Bachelor of Science degree in the College of Arts and Sciences may complete requirements for a minor in education leading to teacher licensure in the state of Ohio. Application should be made in the Office of the Assistant Dean for Student Personnel, 306 White Hall.

All mathematics requirements for the Bachelor of Arts or Bachelor of Science and the adolescence/young adult education mathematics requirements listed under the Bachelor of Science in Education degree must be satisfied. A course may be used to satisfy a requirement in both programs.

PURE AND APPLIED MATH DEGREE REQUIREMENTS:

General Requirements:
MATH 22005 Analytic Geometry and Calculus III 3
MATH 31011 Discrete Mathematics Structures 3
MATH 34002 Fundamental Concepts of Geometry 3

One of the following:
MATH 34001 Fundamental Concepts of Algebra 3
MATH* 41001 Introduction to Modern Algebra I 3

One of the following:
MATH* 41001 Introduction to Modern Algebra I 3
MATH 42001 Introduction to Analysis I 3
MATH 46001 Elementary Topology 3
MATH 47011 Theory of Numbers 3

One of the following:
MATH 45011 Differential Geometry 3
MATH 45021 Euclidean Geometry 3
MATH 45022 Linear Geometry 3

One of the following:
MATH 32044 Introduction to Ordinary Differential Equations 4
MATH 40011 Introduction to Probability Theory Applications 3
MATH 42011 Mathematical Optimization 3
MATH 42021 Graph Theory and Combinations 3
MATH 42031 Mathematical Models 3
MATH 42048 Introduction to Complex Variables 3
MATH 42201 Introduction to Numerical Computing 3
(*)Approved 40000-level MATH courses

Group A One of the following:
MATH 34002 Fundamental Concepts of Geometry 3
MATH 45021 Euclidean Geometry 3
MATH 45022 Linear Geometry 3

Group B Two of the following:
MATH 22005 Analytic Geometry and Calculus III 3
MATH 3001 Basic Probability and Statistics 3
MATH 32044 Introduction to Ordinary Differential Equations 4
MATH 40011 Introduction to Probability Theory and Applications 3
MATH 42001 Introduction to Analysis 3
MATH 42048 Introduction to Complex Variables 3
MATH 42201 Introduction to Numerical Computing I 3
MATH 47011 Theory of Numbers 3

Total 30-31