

# Majoring in . . . .

## Math

### Description of Math

#### What is mathematics?

Mathematics is a scientific field focused on the study of quantitative relationships in solving problems.

#### What do math majors study?

Math majors focus on the analysis of quantities, magnitudes, forms, and their relationships, using symbolic logic and language. They study the formulation, testing, interpretation, and application of math concepts and theories.

#### What skills do math majors have?

Math majors usually possess:

- Good computational skills;
- Ability to organize, synthesize, and analyze numerical data;
- Proficiency at making logical decisions; and
- Ability to conduct and interpret research studies.

#### What else do math majors study?

Math is considered a liberal arts major. This means that students take a variety of courses in addition to those required in the major. These courses help develop knowledge and skills that are applied throughout one's lifetime.

Liberal arts courses provide a background to strengthen critical thinking; problem solving; written, oral, and interpersonal communication; quantitative, analytical, and reasoning skills. These skills are considered very important for future success in the workplace. A strong liberal arts background also provides the foundation of an educated person.

### **Course Requirements**

**General education:** About 60 credit hours of general education courses are required. These courses give a broad range of knowledge in science, behavioral science, foreign language, writing, arts, ethics, civilization, literature, and urban environment.

**Major courses:** A minimum of 41 credit hours of math courses above the 100 level are required in this program of study. Math majors take courses such as:

- Abstract Algebra
- Analysis
- Calculus
- Concepts of Statistics
- Differential Equations
- History of Mathematics
- Linear Algebra
- Mathematical Computing
- Mathematical Expositions
- Mathematical Modeling
- Mathematical Reasoning
- Mathematical Structures
- Methods of Applied Math
- Modern Geometry
- Multivariate Calculus

Math majors may choose a concentration in applied math, pure math, math education, or an individual plan of study with the help of the faculty advisor.

**Electives:** About 20 credit hours are required.

Some math majors choose to use their electives toward a minor (18-21 credit hours) to give them an additional area of specialization.

## Careers in Math

The math major provides a good background for entry to any number of professional fields. Some of these careers include:

- Academic advisor
- Actuary
- Bank manager
- Business executive
- Corporate treasurer
- Financial analyst
- Grant assistant
- High school teacher
- Insurance consultant or agent
- Investment/securities broker
- Market research analyst
- Professor
- Quality control analyst
- Retail management
- Sales manager
- Systems analyst

A must for any student thinking about majoring in math: Watch the *Careers in Mathematics* video that contains interviews with mathematicians working in industry, business and government. People working outside academia describe what their day-to-day work life is like and how their background in math contributes to their ability to do their job.

Developed jointly by the American Mathematical Society, Society for Industrial and Applied Mathematics, and Mathematical Association of America, the video can be viewed on-line at [www.msri.org/ext/CareersInMathematics.html](http://www.msri.org/ext/CareersInMathematics.html)

## Next Steps

If you are interested in learning more about becoming a math major at VCU, consider doing each of the following things. Check them off as you complete each step.

- Check out the VCU math webpage at [www.math.vcu.edu/](http://www.math.vcu.edu/).
- Take a calculus and other advanced-level math course.
- Read about the major in the *Undergraduate Bulletin*.
- Review the math major graduation worksheet with an academic advisor.
- Talk to one or more upper-level math students about their major experience.
- Discuss the major with one or more math professors.
- Go to the Career Center to read about careers in math.
- Go to the VCU bookstore and browse through the math textbook section.
- Explore internship possibilities through the Career Center and the Math Department.

□ Check out various on-line journals at  
[www.ams.org/mathweb/mi-journals.html](http://www.ams.org/mathweb/mi-journals.html) for information on topics related to the math field.

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