Mathematics is a mysterious and challenging subject. Why would you major in it?

The fact that you are considering the major indicates that you are probably pretty good at math. Likely you enjoy problem solving, appreciate patterns and structure, and see mathematics as the universal language of science. That alone may be a sufficient reason to major in it.

But perhaps you are wondering what kind of career a major in mathematics would lead to. The simple fact is that numerous studies have shown that math majors secure the very best jobs.

The National Association of Colleges and Employers' 2005 salary survey provides a comparison of average starting salaries for students by undergraduate major. It shows mathematics majors have one of the highest average salaries among all majors.

For several years in a row JobsRated.com ranked *Mathematician* as the number one best job among 200 different careers. The ranking was based on such factors as salary, hours, work environment and overall satisfaction. (For comparison, the number 2 and 3 jobs are Actuary and Statistician. Number 200 is Lumberjack. Stay in college.)

Mathematics majors even have a competitive advantage in non-mathematical careers. A study by The Chronicle of Higher Education shows mathematics majors are among the top scorers in LSAT and GMAT exams.

Overall, math majors tend to be especially adept at careers that involve abstract reasoning and creative problem solving. A mathematics degree certifies that you can think critically, independently and creatively; that you are capable of mastering complex systems and untangling the knottiest problems. Such traits are highly valued by employers of all types.

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Minor in Mathematics

Receive a minor in mathematical sciences by earning 18 credits offered by the Department of Mathematics and Applied Mathematics (MATH) and the Department of Statistical Sciences and Operations Research (SSOR), including a minimum of three credits of calculus and nine upper-level credits. You must also have a minimum 2.0 GPA in the minor.

File a **Change of Major/Concentration/Minor** form to declare a minor. Also, before graduating you need to file a **Graduation with Minor Application**. These forms (and directions for submitting them) can be found by visiting our web page, www.math.vcu.edu. Pull down the **Current Students** tab and select **Minor Requirements and Information**.

The Department of Mathematics and Applied Mathematics is housed in the fourth floor of Harris Hall, at the corner of Harrison Street and Floyd Avenue. It's the large building at the lower center of this photo.

VCU

Virginia Commonwealth University

Department of Mathematics and Applied Mathematics
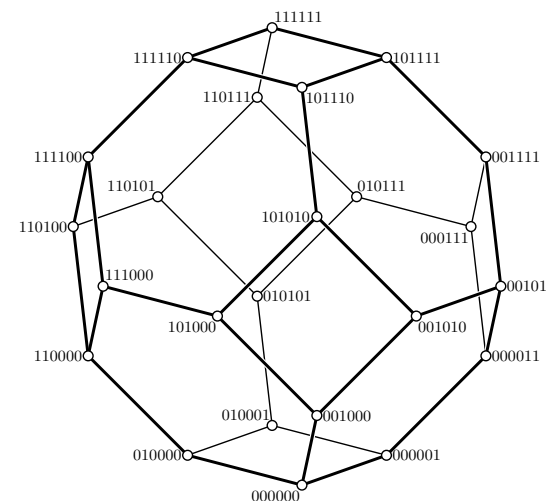
Major in Mathematics

THE Department of Mathematics and Applied Mathematics offers a program leading to the B.S. degree in mathematical sciences. Our department consists of 22 tenured or tenure track professors, all committed to excellent teaching and mentoring, and actively involved in research. Areas of strength include applied mathematics, biomathematics, discrete mathematics and logic.

The department offers many seminars and colloquia. There is an active math club and a chapter of the Pi Mu Epsilon Society. Fridays at 2:00 the department hosts an informal tea in the common area on the 4th floor of Harris Hall, where students and faculty gather for coffee, cookies and conversation. Feel free to join us!

For additional information about the department see our web page at www.math.vcu.edu or visit the department and ask at any open door.

Major in Mathematics
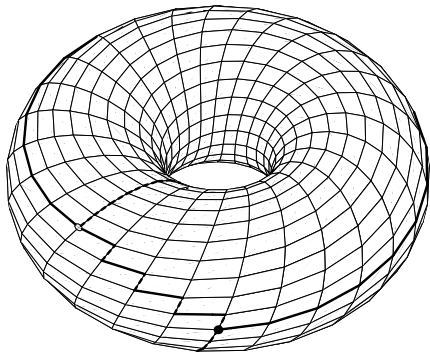
Degree requirements

In addition to satisfying the general education requirements of the College, every mathematics major must demonstrate proficiency in the following core courses. A grade of C or better is required in those courses marked by an asterisk (*).

MATH 200	Calculus with Analytic Geometry I *	4 cr.
STAT 212	Concepts of Statistics	3
MATH 201	Calculus with Analytic Geometry II *	4
MATH 255	Intro to Computational Mathematics	3
MATH 300	Intro to Mathematical Reason*	3
MATH 307	Multivariable Calculus *	4
MATH 310	Linear Algebra *	3
MATH 407	Advanced Calculus	3
MATH 490	Mathematical Expositions	3

A major must also take an approved natural science sequence (with lab), plus an additional natural science course in a science different from that of the sequence. In addition to the math and science courses listed above, every major must earn a minimum of 42 upper level credits in the mathematical sciences. This is typically achieved by selecting one of the following four Mathematical Science concentrations, or *tracks*, and taking the indicated classes.

Mathematics

Take this track if you enjoy the pure, theoretical aspects of mathematics. It prepares you for jobs requiring abstract thinking, as well as for graduate study in mathematics. Take the following courses: MATH 301 Differential Equations*; MATH 501 Intro to Abstract Algebra; MATH 507 Analysis I; MATH 509 General Topology; and MATH 525 Introduction to Combinatorial Mathematics. Also, complete six additional upper-level credits in mathematics, statistics, operations research, or computer science courses, or complete a minor or a double major.

Applied Mathematics

This track develops skills used to apply mathematics to solve real-world problems. It prepares you for jobs in industry, or for graduate study. Take: MATH 301 Differential Equations*; MATH 532 Ordinary Differential Equations I; MATH 533 Partial Differential Equations I; and either MATH 501 Introduction to Abstract Algebra or MATH 525 Introduction to Combinatorial Mathematics. Also, complete nine additional upper-level credits in mathematics, statistics, operations research, or computer science courses (at least one of which must be at the 500 level), or three credits at the 500 level and complete a minor or a double major.

Biomathematics

This track is for students who are interested in medical and/or biological applications of math. Take the following courses: MATH 301 Differential Equations*; MATH 380 Introduction to Mathematical Biology; MATH 532 Ordinary Differential Equations I, MATH 533 Partial Differential Equations I; MATH 582 Computational Modeling in Mathematical Biology; MATH 585 Biomathematics Seminar (2 credits). Also, complete three additional upper-level credits in mathematics, statistics, operations research, or computer science courses, or complete a minor or a double major.

Secondary Mathematics Teacher Preparation

For students who are interested in teaching middle or high school mathematics, take Math 327 Mathematical Modeling; Math 504 Algebraic Structures and Functions; Math 505 Modern Geometry; Math 530 History of Mathematics; Math 554 Using Technology in the Teaching of Mathematics. Students who complete this track may apply these courses to the Masters in Teaching program, completed during a 5th year of study, which allows students to graduate with both a Bachelors and a Masters degree, satisfiying the requirements for a license to teach mathematics in Virginia.

If you don't want to follow any of the above tracks, you can create an individual plan of study in consultation with your advisor. You must take the mathematics core and natural science courses listed above, plus additional mathematics courses to meet the credit requirement for the major.

Declaring your Major

If you would like to declare your major as mathematics (or would like to change it to mathematics), please check the on-call advisor schedule outside Harris 4102 for walk-in math advising. We will be happy talk to you about the program and to file the major declaration paperwork for you. Once you are officially a math major you will be assigned a mathematics advisor who can help you plan your course of study.

For more information, visit the department or see www.math.vcu.edu. Pull down the **Current Students** tab and select **Major Declaration**.