Mathematics

math.richmond.edu

Introduction to Mathematics

Mathematics, one of the oldest of the liberal arts, continues to be a dynamic and developing field. The University's mathematics program has considerable flexibility, which allows for an emphasis in either applied or theoretical mathematics.

All mathematics majors complete at least 11 units of mathematics courses, including courses in calculus, linear algebra, abstract algebra, and analysis, ensuring a thorough foundation in fundamental areas of modern mathematics. Students finish the major by selecting 4 upper-division mathematics electives.

Students can pursue applied or theoretical mathematics (or both), including abstract algebra, analysis, probability and statistics, mathematical modeling, and others. Students interested in math topics outside of the regular curriculum can study these through independent studies under the direction of a faculty member.

The study of mathematics dovetails with other science programs — evidenced by the fact that many mathematics majors complete a second major or a minor in another science. In particular, students with interests in both mathematics and biology will find increasing availability of courses and other opportunities, thanks to three faculty members who specialize in this area.

Prospective majors who have taken calculus in high school typically begin their first year in Calculus II or Multivariate Calculus. The calculus sequence is usually succeeded by Linear Algebra. Advising by department faculty helps students select upper-division courses.

Graduates with degrees in mathematics have opportunities to pursue divergent career paths. Quite a few choose to double major in mathematics and computer science. One double major earned a Ph.D. in mathematics from the University of Michigan, was a post-doctoral fellow at Ohio State University, and is now on the mathematics faculty at Pennsylvania State University at Harrisburg. Another, after earning a Ph.D. in bio-informatics at Stanford University, is now on the Princeton University faculty. One math major went on to receive a law degree from the University of Pittsburgh. Other graduates entered the workforce in careers such as teaching, financial analysis, software development, and consulting. Many students are interested in the actuarial profession, and courses that provide preparation for the first two actuarial exams (probability and mathematical finance) are offered regularly.

Mathematical Economics Major

A major in mathematical economics is offered for mathematically-oriented students who are also interested in economics. Interested students often pursue graduate school in economics but are also well-prepared for the business world in areas such as actuarial careers. For details on this 16-unit major, please see the Mathematical Economics fact sheet.

Learning Environment

Small class size fosters the development of a close relationship between students and faculty. Faculty are committed to teaching and to making themselves available outside the classroom. The department has a chapter of the national mathematics honor society, Pi Mu Epsilon, and provides opportunities for students to compete in the COMAP Modeling Contest and the Putnam Exam.

The mathematics program offers many opportunities for qualified students to engage in mathematics research with faculty members in an area of joint interest. Few universities offer mathematics research opportunities at the undergraduate level, and the Richmond faculty are committed to providing meaningful research experiences to as many interested students as possible. Qualified students may also attend summer programs in mathematics at various sites throughout the country, such as the National Science Foundation's Research Experiences for Undergraduates program.

Majors with excellent grades are encouraged to enroll in the honors program, usually in their junior year. Students secure an advisor with whom they will work on a year-long independent study project culminating in an honors thesis. Students who fulfill the requirements of the program and complete a satisfactory thesis receive an honors designation on their diplomas.

URISE and SMART

URISE, University of Richmond Integrated Science Experience, is a comprehensive program combining early and extensive undergraduate research with an emphasis on interdisciplinary STEM education. URISE is a summer pre-first-year research experience that aims to remove barriers for underrepresented students in STEM disciplines.

Science, Math, and Research Training (SMART) combines introductory biology and chemistry with a coordinated calculus course.

Data Science and Statistics Concentration

Mathematics majors may choose to add a concentration in Data Science and Statistics. Data Science is an emerging interdisciplinary field that uses scientific methods, processes, algorithms, and systems to extract knowledge from data.

The Data Science and Statistics (DSS) Concentration for Mathematics majors is designed to supplement the major, grounding the student with a solid theoretical foundation in statistics while building the strong analytical skills that are needed to work with large and/or complex data sets. The DSS concentration prepares students for graduate study in the statistical sciences and supports students who aim for careers in any emerging area of data science.

Graduate School Acceptances

- Brown University
- California Institute of Technology
- Cornell University
- Georgia Institute of Technology
- Harvard University
- Massachusetts Institute of Technology
- Pennsylvania State University
- Rice University
- Stanford University
- State University of New York, Stony Brook
- University of California, Berkeley
- University of California, San Diego
- University of Chicago
- University of Southern California
- University of North Carolina, Chapel Hill
- University of Notre Dame
- University of Pennsylvania
- University of Virginia
- University of Wisconsin
- Vanderbilt University
- Virginia Polytechnic Institute and State University

Recent Graduate Employment

- Accenture (consulting)
- AETNA Life and Casualty
- Anthem
- Duke Energy
- Epic Systems
- Federal Bureau of Investigation
- Federal Deposit Insurance Commission
  First Investors Corporation
- Google
- Henrico County Public Schools, Virginia
- IBM Global Services
- Lockheed Martin
- Markel Corporation
- Mercer HR Consulting
- MRJ Technology Solutions
- Perdue Inc.
- U.S. Office of Personnel Management
  Watson Wyatt Worldwide