

- Minor
- 4+1 BA/BS-MAT Teacher Prep

The Mathematics program at the University of Massachusetts Dartmouth is designed to provide a solid foundation in the theoretical and applied aspects of mathematics necessary for a variety of professional careers. Mathematics can be pursued as a scholarly discipline or can be treated as a valuable tool in an applied discipline.

Overview of skills developed

Mathematics majors will possess specific technical/analytical skills and conceptual understanding in core areas of mathematics including calculus, linear algebra, combinatorics, computer programs, differential equations, advanced calculus (analysis) & modern algebra. Students connect different areas of mathematics with other disciplines; they effectively use the interplay between applications and problem-solving, applying what they know from one realm to answer questions from another. Students learn to reason rigorously in mathematical arguments; they can follow abstract mathematical arguments and write their own proofs. Students can communicate mathematics: reading, writing, listening, and speaking, and make effective use of the library, and conduct research and make oral and written presentations of their findings. Math majors are also able to write programs or use mathematical software to explore, visualize, and solve mathematical problems and to verify analytical calculations.

Curriculum outline

Students can choose their curricula to emphasize that role of mathematics which will be useful to them in later years. The flexibility within the third and fourth years was established to enable mathematics majors to concentrate in areas of their interest. For example, the Computational Mathematics Program (COMP) is designed for those seeking positions in industry or with the government; the program emphasizes applied and computational mathematics. Other students may use our offerings as preparation for secondary school teaching, graduate school in mathematics, applied mathematics, statistics or computer science, a career in applied mathematics in either the public or private sector, or graduate school in a different area that uses mathematics. An Applied Statistics Concentration is also offered.

Course offerings include:

- Calculus I, II & III
- Discrete Mathematics
- Differential Equations
- Linear Algebra
- Modern Algebra
- Experiments in Computational Mathematics
- Numerical Analysis
- Introduction to Scientific Computation
- Mathematical & Computational Consulting
- Topics in Mathematical Statistics, Complex Analysis, etc.
- Probability
- Number Theory
- Graph Theory
- Small-world Networks
- Numerical Optimization
- Numerical Methods for PDEs
- High Performance Scientific Computing
- Differential Geometry

Top Jobs

- Actuaries (median salary: \$102,880)
- Biostatisticians (median salary: \$88,190)
- Computational Biologists (median salary: \$83,000)
- Cryptanalysts (median salary: \$101,645)
- Data Analysts (median salary: \$83,390)
- Information Security Analysts (median salary: \$98,350)
- Epidemiologists (median salary: \$63,010)
- Financial Analysts (median salary: \$85,660)
- Mathematics High School Teacher (median salary: \$60,320)

Graduate school placements

- University of Massachusetts Dartmouth
- Boston University
- Oregon State University
- Harvard University
- Northwestern University
- University of Virginia
- University of Massachusetts Amherst
- University of South Carolina
- Rensselaer Polytechnic Institute
- Worcester Polytechnic Institute
- University of Rhodes Island

Career placements

- Blue Cross Blue Shield of Massachusetts
- Broad Institute Cambridge
- CVS Pharmacy
- The Hartford
- MEDITECH Boston
- MetLife
- Naval Undersea Warfare Center
- Pratt & Whitney
- Passport Systems
- Teva Pharmaceutical Industries Ltd
- Sandia National Lab
- Brown Brothers Harriman & Co.
- Athenahealth (Electronic Health Records Company)
- MIT Lincoln Lab
- Target
- Tripadvisor

More info and fun facts

- AfterMath Symposium (alumni presentation program)
- ACCOMPLISH (computation-focused modularized learning) STEM scholarship program (<https://accomplish.sites.umassd.edu/>)
- 50% of the faculty have regularly been funded by federal agencies
- Department brings in over \$0.4M in new federal grant money annually
- One third of tenure-line faculty are women
- Recent mathematics alumni are 100% employed
- Undergraduate Research Opportunities
- International Study
- Center for Scientific Computing and Data Science Research
- UMass Dartmouth SIAM Student Chapter