

Mathematics

Bachelor of Arts Degree

Contact

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Admission Requirements

(In years as established by the college)

A high school diploma with the following specific courses:

- 4 English
- 2 Algebra I & II
- 1 Geometry
- 1 Trigonometry
- 3 Lab Science (including chemistry and physics)
- 2 History/Social Studies
- 2 Foreign Language (same language or two years of American Sign Language)
- Academic electives (to equal at least 17 credits)

To ensure current mathematical skills, students should take a mathematics course during their senior year of high school.

Did You Know?

Many opportunities for pursuing research projects with top-ranked faculty exist, several of which are paid positions. Motivated students can graduate in five years with both bachelor's and master's degrees.

College of Liberal Arts and Sciences

Program Description

Students have several options for working one-on-one with faculty on research projects tailored to their interests. There are paid opportunities, independent-study and capstone experiences for undergraduate students, and assistantships for graduate students who wish to pursue a master's degree or an interdisciplinary Ph.D. A full-fledged mathematics Ph.D. program is currently in the planning stages. It is possible for students to graduate in five years with both a B.A. and an M.A. in mathematics by taking suitably chosen senior-level undergraduate courses in their junior year, and taking first-year graduate level courses in their senior year. In addition, we've been offering MAT 400 (Topics in Actuarial science) each spring semester since 2008. It is a preparatory course for the first exam, P/1, in Actuarial Science conducted by the Society of Actuaries (SOA) and the Casualty Actuarial Society (CAS). This course helps our students to pass the first actuarial exam which in turn helps them get well-paying jobs in insurance companies, consulting firms, government insurance departments, colleges and universities, banks and investment firms, large corporations and public accounting firms.

Specialized Information

Opportunities exist within the department for students to serve as undergraduate research assistants. Recently, there has been significant funding available for these to be paid positions; such funding is expected to continue for at least the next several years. In other cases, research projects have been performed via independent-study courses. Both funded and independent-study research projects have been conducted under Associate Professor David Hiebeler's Spatial Population Ecological and Epidemiological Dynamics (SPEED) Lab group.

Associate Professor Andre Khalil leads a signal processing, image analysis and computational modeling lab with applications in biophysics and astrophysics. The disciplines involved are mathematics, physics, computer science, engineering, and biology. The lab has undergraduate and graduate students working with Khalil and his collaborators from UMaine and The Jackson Laboratory, as well as from several international research institutions in the U.S., Canada, France, United Kingdom and Germany.

Between 2005 and 2009, eight students from Associate Professor David Hiebeler's SPEED Lab participated in the Mathematical and Theoretical Biology Institute, an intensive summer research program at Arizona State University that brings many world-renowned visiting scientists to work with students. Many of those students have then gone on to present their work at various conferences, including MathFest (the summer meeting of the Mathematical Association of America) and conferences for the Society for Mathematical Biology and the Society for Industrial and Applied Mathematics. Four of those students subsequently entered Ph.D. programs in various types of applied mathematics or mathematical biology at Arizona State University, North Carolina State University, University of Pittsburgh and Queen's University Belfast (Ireland). Another student from the SPEED Lab participated in a summer research program at North Carolina State University in 2009.

Representative Courses

MAT 126	Calculus I	MAT 401	Capstone Seminar in Mathematics
MAT 127	Calculus II	MAT 425	Introduction to Real Analysis
MAT 228	Calculus III	MAT 434	Introduction to Statistics
MAT 261	Introduction to Abstract Mathematics	MAT 463	Introduction to Abstract Algebra I
MAT 262	Linear Algebra	MAT 465	Theory of Numbers
MAT 259	Differential Equations	MAT 481	Discrete Mathematics

Associated Honor Societies and Student Organizations

Scholarship awards include: the John and Beverly Toole Award to the current president of Pi Mu Epsilon, the Matthew and Ramona Highland Mathematics Scholarship, the George and Helen Weston Scholarship, the Theodore and Dorothy Whitehouse Scholarship, and the Frederick M. Viles Scholarship. The department also funds several book awards for graduating seniors.

Each fall, the department sponsors a group of undergraduate students attending the fall meeting of the Northeastern Section of the Mathematical Association of America. Students can become members of the Maine Alpha chapter of the national mathematics honor society, Pi Mu Epsilon. This group serves to promote the field of mathematics through social, financial and academic activities.

Every November the department conducts a mathematics competition open to all UMaine undergraduates. Students submit solutions by Dec. 1, and three monetary prizes are awarded.

The annual William Lowell Putnam Competition is open to all undergraduates in colleges and universities in the United States and Canada (and unofficially to students in other countries). Designed to test originality in mathematical thinking as well as technical competence, the Putnam Competition is usually held on the first Saturday of December. Prizes are awarded to high-ranking teams and contestants. The highest ranking UMaine student in the competition is awarded the Lucas prize of \$250. Professor Ali Ozluk regularly teaches a 1-credit problem-solving course, MAT 329, which can be repeated for credit and which helps prepare students for the Putnam Competition.

Career and Graduate Opportunities

For graduating seniors who wish to continue their studies in mathematics or statistics, the department offers a program leading to the degree of Master of Arts in Mathematics. We deliver graduate training in a wide variety of specializations, depending on the interests of each student. We have a strong record of placing our M.A. graduates into industry or college level teaching jobs, or into Ph.D. programs in mathematics or statistics. Our graduate students play a vital role in the educational mission of the department, working closely with undergraduates and sometimes teaching their own small classes. Graduating seniors have also gone on to pursue graduate work at other institutions or embarked on careers in teaching, government or industry.

UMaine Graduate Programs

Master of Arts in Mathematics

Master of Science in Teaching

About UMaine

The University of Maine, founded in Orono in 1865, is the state's premier public university. It is among the most comprehensive higher education institutions in the Northeast and attracts students from across the U.S. and more than 60 countries. It currently enrolls 12,000 total undergraduate and graduate students who can directly participate in groundbreaking research working with world-class scholars. Students are offered 88 bachelor's degree programs, 64 master's degree programs, 25 doctoral programs and one of the oldest and most prestigious honors programs in the U.S. The university promotes environmental stewardship on its campus, with substantial efforts aimed at conserving energy, recycling and adhering to green building standards in new construction. For more information about UMaine, go online (umaine.edu). Equal opportunity information also is available online (umaine.edu/eo).

How do I apply?

Visit go.umaine.edu for an application, as well as information about academics and life at UMaine.



Academic Programs 2011–12

The latest versions of the UMaine fact sheets are online (factsheets.umaine.edu). This fact sheet is intended for informational purposes only and is subject to change.

