1865 THE UNIVERSITY OF MAINE

MATHEMATICS

Program of Study

The Department offers work leading to the degree of Master of Arts in Mathematics. The program outlined below offers the student three "pathways" or tracks for advanced study in mathematics: pure, interdisciplinary, and statistics. All paths provide both thesis and non-thesis options. At the time of admission, students will be assigned a preliminary advisor to assist them in developing a course of study consistent with their specific goals, and monitor their progress until they can formally establish their own advisory committee by the end of the first year. Some graduate courses are scheduled for alternate years. Individualized reading courses can be used to augment the available courses in order to develop a complete course of study. The Department has no language requirement.

Degree Requirements

I. Base Requirements: All three tracks require at least 30 credit hours, including one or two semesters of the Graduate Research Seminar, MAT 590. Credits must be distributed as follows:

    A. Thesis Option: A minimum of 21 credit hours (of which 6 are thesis credits) must be at the graduate level. A program of study must be developed and approved by the student's advisory committee. Upon completion of the course of study and the thesis, the student must present an oral defense of the thesis.

    B. Non-thesis Option: A minimum of 24 credit hours must be at the graduate level. Written comprehensive examinations must be taken in the semester prior to graduation; no oral examinations are required. The comprehensive examinations consist of three parts, consisting of approximately 2/5 upper level undergraduate mathematics, 2/5 core graduate courses from the chosen track, and 1/5 on a specialty. Decisions for retakes are up to the student's committee.

II. Track Requirements: (All unspecified course work is chosen by the student in consultation with the advisory committee.)

    A. Pure Mathematics - All students are required to take the three core classes MAT 523, MAT 527, MAT 563, plus at least two courses from MAT 531, 562, 577, and 524, as 15 of the required credit hours.

    B. Interdisciplinary Mathematics - All students are required to take the core classes MAT 523, MAT 527, and MAT 557 as 9 of the required credit hours. Up to 12 of the remaining required credit hours may be taken in one or more other disciplines.

    C. Statistics - All students are required to take the core classes MAT 523, MAT 531, and MAT 532 as 9 of the required credit hours. In addition, students are required to take MAT 533 and a course in Linear Statistical Models through a 3-credit special topics course or reading course.

III. Seminar Requirement: All graduate students must successfully give at least two seminars. It is suggested that one seminar be given in each of the fall and spring semesters of the second year. As this is a credit-bearing requirement, it is necessary to register. The assigned course number is MAT 590. For students following the thesis option, one credit of MAT 590 is required, and the thesis defense fulfills the second seminar requirement. For students in the non-thesis option, MAT 590 must be taken twice, once for each of the two seminars given. The talks should be prepared in consultation with and under the supervision of the advisor. Students should submit a short advisor-approved abstract to the graduate coordinator at least one week in advance of the seminar day, for inclusion in the announcement. The evaluation will be handled by the advisor in consultation with the members of the student's advisory committee. A clear statement of the problem should be given with a brief historical sketch. All technical terms, specific to the area of expertise, should be clearly defined before they are used.

Courses Allowable for Graduate Credit

If the thesis option is chosen, three 400-level courses may be given graduate credit at the discretion of the advisory committee. If the non-thesis option is chosen, only two such courses may be used. Graduate credit will not be given for any course below 400. Normally, any MAT 400 level course listed in the course description section can be taken for graduate credit with the following exceptions: MAT 445, 425, 463.

Five Year Program

The Department offers a five-year program of study that leads to both the bachelor's and master's degrees. Due to the alternate-year scheduling of our graduate courses, students in this program must enroll in graduate courses during their fourth year in order to complete the requirements for the M.A. in one year of post-baccalaureate study. Contact the Department for further details.

Financial Aid	A limited number of graduate assistantships and other financial aid are available on a competitive basis each year. Students interested should send a letter and resume to the Graduate Program Office, Maine Business School requesting consideration for financial aid. Applications for financial aid should be received by February 15 for the following academic year. A definite decision on financial aid is made only after an applicant has been fully admitted to the Graduate School.
Applying	In addition to satisfactory performance of the candidate as an undergraduate as evidenced by transcripts, letters of recommendation, and G.R.E. scores, the Department requires one semester of advanced calculus (equivalent to MAT 425) and one semester of abstract algebra (equivalent to MAT 463). Occasionally, students can be admitted with a deficiency in one of these areas if the deficiency is made up in the first year of graduate study. Application forms can be obtained from the Graduate School.

Correspondence

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Graduate Faculty

Eisso Atzema, Ph.D. (Utrecht University, Netherlands, 1993), Lecturer. History of mathematics, geometry, mathematics education.

David M. Bradley, Ph.D. (University of Illinois, Urbana 1995), Associate Professor and Chair. Classical analysis, number theory, special functions, difference differential equations.

William O. Bray, Ph.D. (University of Missouri, 1981), Professor. Classical analysis, harmonic analysis.

Robert Franzosa, Ph.D. (University of Wisconsin, 1984), Professor. Applied topology, mathematics education.

Pushpa L. Gupta, Ph.D. (Wayne State University, 1970), Professor. Statistics, biostatistics, reliability theory, multivariate analysis and modeling.

Ramesh C. Gupta, Ph.D. (Wayne State University, 1970), Professor. Statistics, biostatistics, probability, stochastic processes, reliability theory, mathematical models.

William Halteman, Ph.D. (University of Washington, 1980), Professor. Biostatistics.

David Hiebeler, Ph.D. (Cornell University, 2001), Associate Professor. Mathematical ecology and epidemiology, modeling and simulation.

André Khalil, Ph.D. (Univserité Laval, Canada, 2004), Assistant Professor. Image analysis of computational modeling.

Andrew Knightly, Ph.D. (University of California, Los Angeles, 2000), Assistant Professor and Graduate Coordinator. Number theory, automorphic forms.

Sergey Lvin, Ph.D. (University of Moscow, Russia, 1977), Lecturer. Partial differential equations, applied mathematics.

Ali E. Özlük, Ph.D. (University of Michigan, 1982), Professor. Analytic number theory.

William M. Snyder, Ph.D. (University of Maryland, 1977), Professor. Number theory.

Natasha Speer, Ph.D. (University of California, Berkeley, 2001), Assistant Professor. Mathematics education.