Department of Mathematics and Statistics

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Faculty

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Mission

The mission of the Department of Mathematics and Statistics is to provide a high-quality program that enables students throughout the university to examine and appreciate the principal concepts of mathematics and statistics and to utilize them effectively in applications. The program incorporates modeling, real-world data, classical and contemporary methods, and modern technology. The department offers majors and minors that are designed to prepare students for graduate study or for entering a profession. The curriculum also provides service courses to programs in all colleges. The department maintains a vital program of research and makes outreach courses available to the citizens of the region.

Expected Outcomes

The program of the Department of Mathematics and Statistics

1. introduces all students to the mathematical method, mathematical problem solving, and the mathematical world-view.
2. provides service courses to equip students from diverse disciplines with the mathematical and statistical background needed for their majors.
3. provides a solid foundation in the relevant terms, methodology, and applications of mathematics and statistics.
4. strengthens the ability of students to solve problems and to present their solutions both orally and through written reports.
5. provides students with opportunities to use appropriate technology productively.
6. enables graduates in mathematics and statistics to understand the past, present, and future of these disciplines within our society.
7. prepares graduates in mathematics and statistics for graduate study in the mathematical sciences or to enter professions that utilize their education in mathematics and statistics.
8. produces graduates in mathematics and statistics who are able to formulate, model, and solve mathematically oriented problems, to learn new mathematical concepts on their own, and to undertake intellectually challenging tasks with confidence.

Admission Requirements

Mathematics placement recommendations for entering students will be based on their mathematics placement examination results, their mathematics ACT score, and their high school record. All students are encouraged to take the placement exam before enrolling in their first mathematics course.

Students who have a deficiency in algebra or geometry must remove the deficiency by taking the appropriate course(s) chosen from Mathematics 070, 080, 090.

Students, particularly in science, who need more than one year of mathematics should plan to take Mathematics 251-252. If a student has not completed high school trigonometry, he/she should take Mathematics 185 before enrolling in Mathematics 251.

Facilities

As the first state university in Tennessee to allow Internet access to all students and faculty from residence halls, apartments, and offices, UT Martin's computer facilities rank among some of the best in the southeast if not the nation. Numerous student labs provide access to a variety of personal computers (Windows and MacOS). Some of the labs are open 24 hours. All computers in the university labs provide for Internet access. Student labs in the Humanities Building are open 24 hours per day and include Maple and Minitab software for mathematics and statistics students.

The department operates a people-oriented mathematics laboratory. Tutorial assistance is provided for students in freshman and sophomore-level mathematics courses. Several self-paced courses are offered through the laboratory. Students in mathematics intensive majors are employed as tutors in the mathematics laboratory.

Scholarships and Awards

The Arthur L. and Nelle L. Sparks Mathematics Scholarships are awarded to students majoring in mathematics who have demonstrated successful academic performance. Selection is made by the UT Martin Scholarship Committee. The Louise Knifley Memorial Scholarship is awarded to a junior or senior mathematics major with appropriate mathematics courses and grade point average. The faculty selects the recipient. In addition to the Knifley scholarship, the Mathematics Award is given to the outstanding senior in mathematics as selected by the faculty.

Student Organizations

The department supports a student mathematics organization that provides opportunities for extra-curricular mathematical activities and interaction with the faculty in an informal setting. The department encourages student membership in the Mathematical Association of America, a national organization of mathematicians. The department also encourages student research, student presentations, and student attendance at regional mathematics conferences.

Cooperative Education Program

The Cooperative Education Program in Mathematics offers the participant an opportunity to gain valuable professional experience while preparing for a career or for further study in graduate school. In addition, the participant earns money to help finance college expenses. After successful completion of the freshman year, qualified students admitted to the program alternate semesters at the university.

Application for admission should be made during the fall semester of the freshman year. Further information is available from Employment Information Services, UT Martin (731) 587-7740.

Mathematics Major (6910)

The department offers the mathematics major for both the Bachelor of Arts (6910-BA) and the Bachelor of Science (6910-BS) degrees. Mathematics majors must satisfy the general education requirements for the appropriate degree and are advised to select physics as one of the laboratory sciences. If a student is not prepared to enter calculus as the first mathematics course, the elective hours can be used to take college algebra and/or pre-calculus. The completion of a minor or the professional-education courses necessary for professional licensure are required for both the B.A. and the B.S.

Double majors: Mathematics/Computer Science 340 can only be allowed in the requirements for a mathematics major or computer science major but not both. Either Mathematics 241 or Computer Science 301 may be used to satisfy the requirements for a discrete course since credit is not given for both.

One of the goals of the mathematics major is to prepare students for mathematical careers in business, government, education, or industry. To meet the various professional needs of the mathematics major, different options are available within the major.

Option I: Statistics/Actuarial Science

Students seeking a career in statistics or actuarial science are advised to take Mathematics 340, 365, 451, 455, 461, 462, 465, 481. These students must also include Mathematics 210 in their degree programs.

Option II: Graduate Study

Students who intend to enroll in a graduate program in mathematics are advised to take Mathematics 330, 350, 430, 451, 471-472, 481-482.

Option III: Secondary Mathematics Teaching

Students in the College of Engineering and Natural Sciences who are seeking the necessary professional-education courses to qualify for licensure as a secondary mathematics teacher must be admitted to the teacher-education program in the College of Education and Behavioral Sciences. They should consult the College of Education and Behavioral Sciences about admission and licensure requirements. The necessary mathematics courses are 210, 241, 251, 252, 310, 320, 410, 420, 451, 471; one of 461 or 481; one of 462, 472, or 482; and six additional hours of upper-division mathematics not including cooperative-education courses. This option will usually require at least four-and-one-half years (nine semesters).

Major: B.A. or B.S. curriculum (6910)

A mathematics major consists of 42 hours to include the following mathematics courses: 241 Foundations of Mathematics; 251 Calculus I; 252 Calculus II; 310 Linear Algebra; 320 Multivariate Calculus; two of 461 Probability and Statistics I, 471 Abstract Algebra I, 481 Real Analysis I; one of 462 Probability and Statistics II, 472 Abstract Algebra II, 482 Real Analysis II; two of 330 Differential Equations, 340 Numerical Analysis, 350 Number Theory, 410 Geometry, 430 Complex Variables, 451 Applications and Modeling; and nine additional hours of upper-division mathematics not including cooperative education courses.

Minors

Mathematics (M-6910)

Mathematics 251-252, Calculus I-II, are prerequisites to the mathematics minor which consists of 241 Foundations of Mathematics, 310 Linear Algebra, and nine additional hours of upper-division mathematics.

Statistics (M-6830)

Mathematics 210 Elementary Statistics and Probability and Mathematics 251-252 Calculus I-II are prerequisites to the statistics minor. The minor consists of Mathematics 461 Probability and Statistics I and nine hours chosen from Mathematics 365 Regression Analysis, Mathematics 455 Design of Experiments, Mathematics 462, Probability and Statistics II, and Mathematics 465 Statistical Computing.

Secondary Mathematics Majors in the College of Education and Behavioral Sciences

Students in the College of Education and Behavioral Sciences who are secondary mathematics majors with the intent of teaching in secondary schools are required by the College of Education and Behavioral Sciences to complete the following mathematics courses: Mathematics 210, 241, 251, 252, 310, 320, 410, 420, 451, 471, and one additional upper division mathematics course. Students should consult the College of Education and Behavioral Sciences pages in the catalog for all other course requirements.

Courses Offered by Department of Mathematics and Statistics

Mathematics 070-080 Developmental Algebra I-II (F, Sp)
Mathematics 090 Developmental Geometry (F, Sp)
Mathematics 130 The Nature of Mathematics (Sp)
Mathematics 140 College Algebra and Elementary Functions (F, Sp)
Mathematics 160 Calculus for Business and Life Sciences (F, Sp)
Mathematics 185 Precalculus (F, Sp)
Mathematics 191-192 Principles of Mathematics (F, Sp)
Mathematics 210 Elementary Statistics and Probability (F, Sp)
Mathematics 241 Foundations of Mathematics (F)
Mathematics 251-252 Calculus I-II (F, Sp)
Mathematics 291 Special Topics in Mathematics (as needed)
Mathematics 310 Linear Algebra (Sp)
Mathematics 320 Multivariate Calculus (F, Sp)
Mathematics 330 Differential Equations (F)
Mathematics 340 (540) Numerical Analysis (Sp--even)
Mathematics 350 Number Theory (Sp--odd)
Mathematics 365 (565) Regression Analysis (F--odd)
Mathematics 410 (610) Geometry (Sp--even)
Mathematics 420 (620) History of Mathematics (Sp--odd)

Mathematics 430 (630) Complex Variables (Sp--even)
Mathematics 451 (651) Applications and Modeling (F)
Mathematics 455 (655) Design of Experiments (Sp--even)
Mathematics 461 (661) Probability and Statistics I (F--even)
Mathematics 462 (662) Probability and Statistics II (Sp--odd)
Mathematics 465 (665) Statistical Computing (Sp--odd)
Mathematics 471 (671) Abstract Algebra I (F)
Mathematics 472 (672) Abstract Algebra II (Sp)
Mathematics 481 (681)Real Analysis I (F--odd)
Mathematics 482 (682)Real Analysis II (Sp--even)
Mathematics 491-492 (691-692) Special Topics (as needed)
Mathematics 710 Selected Topics in Arithmetic for Teachers (as needed)
Mathematics 720 Selected Topics in Algebra for Teachers (as needed)
Mathematics 730 Selected Topics in Geometry for Teachers (as needed)

Complete course descriptions can be found in the Course Description section of the catalog.