

**LEARNING OUTCOMES**  
**Graduate Program in Mathematics**

- Students will develop and demonstrate the ability to reason mathematically by constructing mathematical proofs and recognizing and analyzing accurate numerical data in all core courses. Students will learn that truth in mathematics is verified by careful argument, and will demonstrate the ability to make conjectures and form hypotheses, test the accuracy of their work, and effectively solve problems.
- Students will learn to identify fundamental concepts of mathematics as applied to science and other areas of mathematics, and to interconnect the roles of pure and applied mathematics.
- Students will demonstrate that they can communicate mathematical ideas effectively by completing a graduate project or thesis involving an investigative mathematical project, together with oral and written examinations.
- Students will demonstrate that they can write mathematics well, consistent with the written tradition of the discipline.
- Students in cooperative doctoral programs will demonstrate their ability to create significant, original mathematics.
- Students in the Actuarial Science Track will show mastery of actuarial science concepts and techniques by passing actuarial examinations administered by the Society of Actuaries and other testing authorities.