Mission Statement

The instructional mission of the University of Hawai‘i – Hilo Mathematics Department is threefold. First, the major program is designed to prepare its students for successful careers in secondary education and other areas requiring a strong foundation in mathematics, or for success at the graduate level, either in mathematics or a related discipline. The degree is intended to familiarize students with a wide range of areas within the field of mathematics, and to instill in them an appreciation for the rigor and structure of the discipline. Second, the math department provides extensive support to those departments requiring mathematics content for their majors. Third, the department services non-science majors by offering a limited selection of courses that are designed to introduce the students to the fundamental concepts that constitute classical and contemporary mathematics.

The BA in Mathematics is offered through two tracks, the Traditional and the Teaching track. Each track requires two years of calculus and one semester each of discrete math and linear algebra. The traditional track includes one-year sequences in the classical areas of Modern Algebra and Real Analysis, and students completing this track are particularly well prepared for graduate study. The teaching track includes an emphasis on probability and statistics, consistent with recent National Council of Teachers of Mathematics (NCTM) standards, as well as a requirement for a one-year sequence from areas such as Differential Equations, Modern Algebra, and Real Analysis.

Program Goals

Mathematics majors should develop:

1. A general understanding of the different areas of mathematics and how they interrelate, and the importance of mathematics in a scientifically oriented society.
2. Classical theorem-proving skills, which include the ability to reason mathematically and to apply the rigor necessary to construct proofs.
3. A refined understanding of the problem solving process.
4. The ability to independently develop and deliver all pre-college math curriculum, if the professional goal is teaching.
5. A working knowledge of technology appropriate to the field.
6. The skills necessary to
   • Read, write, translate and articulate mathematically related material,
   • Solve problems using a variety of techniques including algebraic, numerical, and spatial reasoning through visualization (e.g. graphically), and
   • Make inferences and generalizations.

Students outside the major should develop:

1. The ability to apply the respective concepts and techniques to their major, in the case the course is required for the major.
2. An appreciation for the applicability of the respective concepts and techniques to contemporary society, in the case the course is taken to satisfy the general education requirement.