

Department of Mathematics

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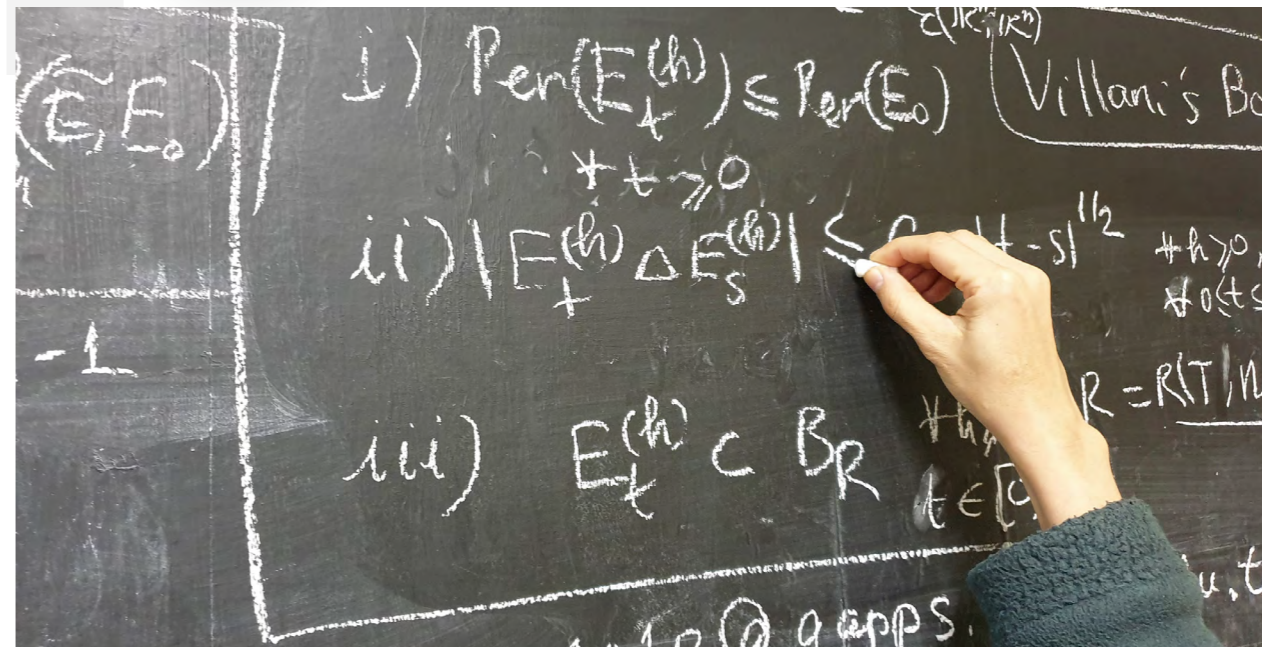
Introduction

- A wide range of research interests and outstanding performances in both research and teaching.
- A nationally and internationally recognized research group in Mathematics Education. An excellent and well-organized preparation program for future secondary school mathematics teachers.
- We emphasize equipping students with core mathematical knowledge, and various advanced courses are provided. Opportunities to learn more about the foundations, frontiers, and diverse applications of mathematics.
- A warm atmosphere for international students. Great opportunities for cooperation and academic exchange programs.
- Flexible courses for students with different career goals, including pure mathematics, statistics, science, information, engineering, financial management and others.
- The teacher preparation program that aims to develop mathematics teachers with exceptional mathematics competence, mathematics teaching competence, and positive dispositions toward

mathematics teaching. In addition to mathematics courses provided by numerous outstanding scholars in various fields, we provide the most comprehensive set of mathematics education courses in Taiwan. We cultivate preservice teachers in both theoretical and practical fields to meet the teaching qualifications required in the 21st century. The program is also driven by international trends with the inclusion of international baccalaureate (IB) teacher education with a strong focus on equipping preservice teachers to prepare students worldwide with academic and global mathematics knowledge and skills.

Instructional Objectives

- Cultivating professional researchers in pure mathematics, applied mathematics and mathematics education.
- Cultivating competent secondary school mathematics teachers and higher education instructors.



Degree Requirements

Undergraduate students are required to take 2-year courses in all of the following areas: algebra (including linear algebra), calculus, and geometry. Modern mathematical areas such as differential equations, probability and statistics, and numerical analysis, are also included in our curriculum. At the graduate level, students are expected to participate in at least one research group led by faculty. Our feature research groups include differential geometry, number theory, optimization, discrete mathematics, statistics, numerical analysis, and mathematical educations.

Career Prospects

- Further Study: pursue higher studies in Taiwan or abroad.
- Workforce: educational administrative officers, secondary school teachers, text-books editors in educational contexts; or engaged in information technology, biological technology, financial management, or actuarial industries, etc.



Feature of the Curriculum

Being a leading university that has trained perspective high school teachers for several decades, we have a very strong research group in mathematical education. Our department is also expected to join the International Baccalaureate program to train teachers with bilingual ability. Additionally, we offer a program that combine mathematics with scientific computations. Coding theory, cryptography, mathematical imaging, and machine learning can find roots in analysis, algebra, and geometry. Computer-based knowledge is immersed into traditional classrooms even in basic courses such as calculus, linear algebra, and discrete mathematics. Students are required to be able to code in at least one popular programming language such as C, MATLAB, and Python.

Based on the above knowledge in applied mathematics, students will conduct a research project in their third year and present their findings at the student seminar held at the end of the year.

