

Department of Applied Mathematics

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What is Applied Mathematics?

Mathematics is the science of order. Mathematicians seek to identify instances of order and to formulate and understand concepts that enable us to perceive order in complicated situations.

Concentration in mathematics is designed to acquaint the student with the most important general concepts underlying the three branches of modern mathematics. Concentration in mathematics will provide an adequate basis for further study in either pure or applied mathematics. Because so many disciplines now rely on the mathematical sciences, a concentration in mathematics provides a valuable background for many different careers.

Applied Mathematics at Kyung Hee

Mathematics plays an important role in modern society and has numerous applications. It has been an indispensable tool in science and engineering and is being used in sophisticated ways in the social sciences, humanities and business. With expanding applications, many areas of mathematics, both pure and applied, have grown tremendously. Accordingly, the department offers a variety of courses, theoretical and practical, for applied mathematics majors and double majors. Talented students are able to serve after graduation as middle and high school teachers, information processing engineers, government officials and so on. In addition, students can enter graduate school to continue their academic careers by completing a Master's or doctoral degree. This major, which includes both fundamental and applied mathematics, is broadly classified into 4 pursuits:

- to cultivate competent people who have the ability to take on a leading roles in an advanced society
- to produce manpower to guide industrial technology and to make in depth study of mathematics and contiguity technology in the academic world or area of research
- to cultivate experts in science education
- to provide the basic knowledge and a scientific way of thinking about mathematics necessary for study in science and engineering as well as other areas

Degree Requirements

To receive the Bachelor of Science in Applied Mathematics, a student must:

- complete a minimum of 130 credit units.
- satisfy the General Requirements of the School for professional degrees.
- complete 12 units of Required Courses.
- complete 36 units of Technical Electives for applied mathematics.
- complete 51 units (maximum 56 units) stated in the common studies program and Humanities/Social Science Electives.

Courses

Year 1

Physics and Experiment I, Physics and Experiment II, Calculus I, Calculus II, Linear Algebra, Differential Equation, Object Oriented Programming

Year 2

Analysis I, Analysis II, Numerical Analysis with Lab, Vector Analysis, Linear Programming, Introduction to Geometry, Calculus III, Probability and Statistics and Its Applications, Set Theory and Fuzzy Sets

Year 3

Topology I, Topology II, Modern Algebra I, Modern Algebra II, Introduction to Probability and Statistics I, Probability and Statistics II, Complex Analysis and Its Applications, Numerical Differential Equation, Differential Geometry I

Year 4

Special Lectures on Abstract Algebra, Differential Geometry II, Real Analysis, Mathematics Education, Functional of Several Variables, Modern Geometry, Fourier Analysis Based on Numerical Analysis

Careers and Graduate Destinations

For those who have applied mathematics as their sole major, a program toward obtaining middle and high school teaching certification is available. Furthermore, jobs in such areas as information processing and insurance management are also available to students majoring in mathematics. Currently, about ten percent of B.S graduates enter graduate programs related to mathematics, about thirty percent are teachers in middle or high school, and many others work in the information technology sector.

Faculty

Jin-Yong Kim, Ph.D. Korea University, 1987, Professor, Algebras, jykim@khu.ac.kr

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