



MATHEMATICS AND ITS APPLICATIONS

The Department of Mathematics and its Applications is privileged to offer one of the newest international MS programs in Applied Mathematics within the Bologna framework. The program is intended to satisfy the growing demand for well-trained applied mathematicians. Graduates will be expected to hold positions in various industries, corporations, banks, research institutes, governmental and EU institutions, and a variety of research or academic fields.

The PhD program covers major branches in both mathematics and its applications. The purpose of the program is to prepare students for a productive academic career.

Both the MS and the PhD programs are carried out jointly with the Alfred Renyi Mathematics Institute of the Hungarian Academy of Sciences (HAS). In addition, the department's faculty is complemented with outstanding scholars from abroad, such as Haim Brezis (Paris VI and Rutgers), Carsten Carstensen (Humboldt University, Berlin), Constantin Corduneanu (University of Texas at Arlington), and Peter D. Lax (Courant Institute, NY).

The student/faculty ratio for the Department of Mathematics and its Applications is 6:1.

Selected Areas of Research

Research areas for the Department of Mathematics and its Applications include: algebra; algebraic geometry; approximation theory; biological and ecological models; combinatorics; computational geometry; computer science; cryptology; evolution equations; dynamical systems; differential equations; differential geometry; ergodic theory; functional analysis; background graph theory; homological algebra; information theory; logic; number theory; numerical analysis; optimization; partial differential equations; probability theory; set theory; singular perturbation theory; statistics; stochastic processes.

Students have a unique opportunity to work under the supervision of outstanding experts in different fields of mathematics and its applications.

For a list of department faculty see: <http://www.ceu.hu/math/People/Faculty/faculty.html>

Special Projects/Programs

The department contributes to the development of CEU as a research-focused university, through close cooperation with other CEU departments (Economics, Environmental Sciences and Policy, International Relations and European Studies, Political Science, Sociology and Social Anthropology) in a shared effort to study regional phenomena, including those connected with transition and globalization.

For more information on Special Projects/Programs please visit: <http://www.ceu.hu/math/>

Student Outcomes

Mathematics has a special unity with a variety of other disciplines; many of the most outstanding advances use ideas and techniques from its fields. Analytical, statistical, numerical and computational methods are widely used nowadays to develop various models associated with biological, ecological, economic, political and social phenomena.

Students can use their interdisciplinary experience gained at the department when they undertake employment in education, industry, business or research institutions.

Additional information is available at: http://www.ceu.hu/admissions_profile.html

The Master's Program

MS in Applied Mathematics (Two-year Program)

The objectives of this program are to offer students who hold a BA or BSc degree with a major in mathematics or a neighboring field:

- an opportunity to expand their knowledge in several fields of mathematics and its applications by providing courses at graduate level
- a unique academic experience via a high-quality, international program taught in English
- for those wishing to continue their studies in the PhD track, the MS program provides comprehensive knowledge in the field of mathematics

MORE INFORMATION AND INQUIRIES

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Tel: (+36-1) 327- 3053, Fax: (+36-1) 327-3166, Email: mathematics@ceu.hu, Website: <http://www.ceu.hu/math>

Degrees offered

Master of Applied Mathematics (MS);
two years

Doctor of Philosophy in Mathematics
and its Applications (PhD)

Application deadlines

January 15, 2008: For all applicants submitting complete packages, and those who wish to take the CEU-administered admissions examinations.

February 28, 2008: For applicants to all programs who submit complete application packages, including language and other applicable test scores.

March 17, 2008: For current CEU Master's students applying to the doctoral program.

For further details:
<http://www.ceu.hu/admissions.html>

Financial Aid

The university is committed to sustaining a geographically diverse and multicultural student body. To further this goal, CEU accepts financial aid applications from students from all over the world.

Detailed information is available at: <http://www.ceu.hu/financial.html>

Excellent students will be offered the possibility to transfer from the MS to the PhD program if their progress during the first year is sufficiently promising. For more details on the Master's program visit: <http://www.ceu.hu/math/>

Sample Courses for the Master's Program

Core Courses

Basic Algebra 1; Basic Algebra 2; Real Analysis; Complex Function Theory; Functional Analysis and Differential Equations; Differential Geometry; Introduction to Computer Science; Probability and Statistics

Elective Courses

Algorithms; Cryptology; Introduction to Discrete Mathematics; Selected Topics in Graph Theory; Game Theory; Function Spaces and Distributions; Introduction to Partial Differential Equations; Evolution Equations and Applications; Calculus of Variations and Optimal Control; Approximation Theory; Numerical Methods; Computational Partial Differential Equations; Statistical Methods; Information Theory; Ergodic Theory; Dynamic Programming and Stochastic Control; Mathematical Models in Biology and Ecology

For a list of courses visit: <http://www.ceu.hu/math/>

Entry Requirements for the Master's Program

Applicants must have earned a (three- or four-year) first degree (i.e., BA or BSc), with a major in mathematics or a related field (e.g., computer science, engineering, physics), from a recognized university or institution of higher education, or provide documentation indicating that they will earn such a degree by the time of enrollment.

In addition to meeting the General CEU Admissions Requirements (see: http://www.ceu.hu/admissions_apply.html), applicants are also required to submit a one-page statement of purpose describing their interest in mathematics, their achievements to date and their future goals. In addition, they must prove familiarity with fundamental undergraduate material by taking a Mathematics Examination or the GRE Subject Test in Mathematics. Alternatively, candidates will be interviewed.

Detailed information on specific requirements is available at: <http://www.ceu.hu/math/ProsStud/prospective.html>

The Doctoral Program

The program offers an innovative curriculum encompassing both traditional mathematics and cutting-edge contemporary applications. It is designed to ensure that students acquire rigorous and state of the art knowledge and to offer research opportunities under expert supervision. For more details on the doctoral program visit: <http://www.ceu.hu/math/DocProg/DocProgram.html>

Doctoral enrollment may continue up to a maximum of six years. Students that are admitted into CEU doctoral programs are eligible to receive a full CEU Doctoral fellowship for up to three years. Further information on CEU's doctoral programs can be found in the Doctoral Programs Academic Regulations at: http://www.ceu.hu/student_policies.html

Mandatory Courses for the Doctoral Program

Semester I

Basic Algebra 1. Prerequisites: Introductory linear algebra and an undergraduate course in abstract algebra; Basic Algebra 2. Prerequisite: Basic Algebra 1; Real Analysis. Prerequisite: Introductory linear algebra, undergraduate calculus

Semester II

Basic Algebra 3. Prerequisite: Basic Algebra 1; Complex Function Theory. Prerequisite: Undergraduate Calculus; Functional Analysis and Differential Equations. Prerequisites: Linear Algebra, Calculus, Real and Complex Analysis

For a list of courses visit: <http://www.ceu.hu/math/Courses/genco.html>

Entry Requirements for the Doctoral Program

In addition to meeting the General CEU Admissions Requirements (see: http://www.ceu.hu/admissions_apply.html), applicants for the PhD program must submit a one-page statement describing their interest in mathematics, their achievements to date and their future goals. Applicants are expected to have a higher education degree and a strong background in mathematics. Typical candidates will hold a BA, BSc, MS, or MSc with a major in mathematics or a related field such as physics, engineering or computer science. Applicants must take either the CEU written Mathematics Entrance Examination or the GRE Subject Test in Mathematics. Alternatively, candidates will be interviewed. More details on these examinations can be found on the department's website: <http://www.ceu.hu/math/ProsStud/prospective.html>

Detailed information on specific requirements is available at: <http://www.ceu.hu/math/DocProg/requirements.html>

Non-discrimination Policy

Central European University does not discriminate on the basis of—including, but not limited to—race, color, nation and ethnic origin, religion, gender and sexual orientation in administering its educational policies, admissions policies, employment, scholarship and loan programs, and athletic and other school-administered programs.