

PhD

MATHEMATICS



The Doctor of Philosophy in Mathematics (PhD-MTH) degree program, offered by the Department of Mathematics and Statistics in the College of Arts and Sciences, is designed to equip students with the skills and knowledge needed to tackle complex challenges and make meaningful contributions to academia, government and industry.



Drawing on the expertise of faculty in a wide range of areas in pure and applied mathematics, the PhD-MTH offers advanced education and research opportunities at the frontier of mathematics and mathematical innovation.

Graduates of the program will be empowered to make significant contributions to the advancement of mathematical knowledge and its practical applications in industry, finance, data analytics and other emerging fields.

Key highlights of the PhD-MTH program include:

- **emphasis on cutting-edge mathematical methodologies**
- **rigorous training and mentorship in advanced research and teaching**
- **available for both part-time and full-time students**
- **competitive assistantships available for qualified full-time students**



The program consists of two components:



Courses related to key aspects of theoretical and applied research, as well as those that suit the research interests of individual students.

Candidates will sit a qualifying PhD exam after finishing a minimum of 12 credits of coursework.



A doctoral dissertation, allowing students to develop cutting-edge research competencies and generate original scientific work that can be published in highly reputed international journals.

Reasons to choose a graduate program at the AUS College of Arts and Sciences



AUS is licensed and its programs are accredited by the Commission for Academic Accreditation of the Ministry of Education's Higher Education Affairs Division in the United Arab Emirates. AUS is also accredited in the United States of America by the Middle States Commission on Higher Education (1007 North Orange Street, 4th Floor, MB #166, Wilmington, DE 19801 USA).



AUS is committed to pushing the boundaries of knowledge through research. Aligning with the university's dedication to research excellence, our research centers are driving transformative and innovative solutions across various disciplines including material sciences; energy, water and sustainable environment; and entrepreneurship, innovation and sustainable development.



Full-time PhD students may be granted a full assistantship covering the total cost of tuition and a major part of living expenses. Part-time students may also qualify for partial assistantships.



AUS PhD students actively engage in research with faculty members and publish their work in scientific journals with high impact in the field.



Hailing from some of the world's leading universities, AUS faculty are accomplished researchers working at the cutting edge of their areas of research.



AUS offers flexible study arrangements for busy professionals, including part-time options.



AUS has a proud tradition of multiculturalism, ranking among the world's top five universities with the highest percentage of international students (Times Higher Education 2023).

Find out more: w.aus.edu/cas/phdmse

Degree Requirements

To earn the PhD-MTH degree, candidates need to successfully complete a minimum of 54 credits of course and dissertation work:

- Courses: a minimum of 24 credits (8 courses)
- Doctoral seminar (zero credit)
- Qualifying examination
- PhD Dissertation: a minimum of 30 credits of research work

Courses

Required Core Courses

Students must successfully complete the following core courses (12 credit hours), which cover advanced topics in fundamental areas of mathematics and expand on their mathematical knowledge.

- MTH 705 Theory of Ordinary Differential Equations
- MTH 710 Functional Analysis
- MTH 711 Measure Theory
- MTH 733 Commutative Algebra
- MTH 795 Doctoral Seminar

Elective Courses

Students must successfully complete a minimum of four courses (for a minimum of 12 credit hours) selected from the following list and subject to the approval of the program coordinator.

- MTH 701 Advanced Probability Theory
- MTH 706 Analysis of Partial Differential Equations
- MTH 707 Extreme Values and Financial Risk
- MTH 715 Operator Theory
- MTH 735 Nonlinear Algebra
- MTH 736 Multiplicative Ideal Theory
- MTH 741 Dynamical Systems and Chaos
- MTH 751 Algebraic Coding Theory
- MTH 761 Algebraic Topology
- MTH 762 Applied Topology
- MTH 775 Computational Differential Equations
- MTH 794 Special Topics in Mathematics

Dissertation and Qualifying Examination

- MTH 790 Qualifying Examination
- MTH 799 PhD Dissertation

Duration of Study

The expected duration for completion of the PhD-MTH degree program is four years and the maximum duration of study is ten years.

Admission Requirements

Applicants to the program must:

- have earned a master's degree in a relevant discipline with a minimum cumulative GPA of 3.0 in mathematics or applied mathematics from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and by AUS
- have attained a minimum Internet-Based TOEFL score of 80 or a minimum IELTS score of 6.5 (Academic Version)
- submit three letters of recommendation, a statement of purpose and a current vitae/resume

Tuition Fees*

AED 5,090/ per credit hour

*Tuition and fees are subject to change. Check w.aus.edu/phd-fees for updated information.

Graduate Assistantships

A number of Graduate Assistantships (GAs) are awarded on a competitive basis to PhD students. GAs cover full or partial tuition fee waiver and/or a stipend. The GA is offered for a maximum of four years.

Deadlines

For admission and assistantship deadlines, visit w.aus.edu/doctoral/deadlines.



Why AUS?

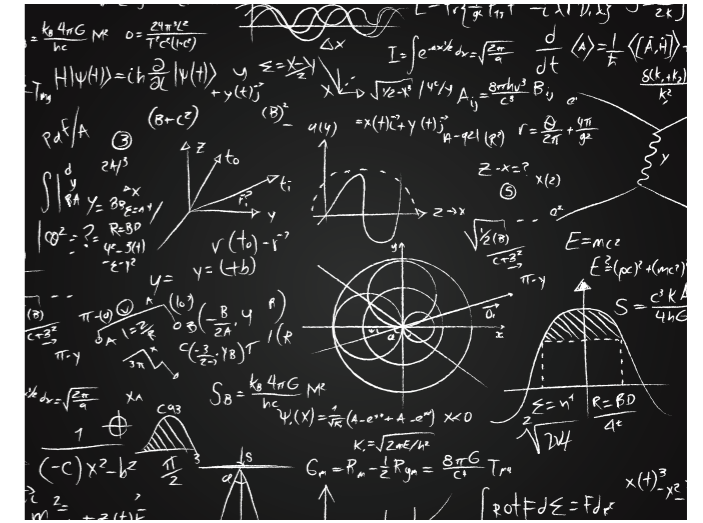
AUS was founded in 1997 by His Highness Sheikh Dr. Sultan Bin Muhammad Al Qasimi, Member of the Supreme Council of the United Arab Emirates and Ruler of Sharjah. Sheikh Sultan articulated his vision of a distinctive institution against the backdrop of Islamic history and in the context of the aspirations and needs of contemporary society in the UAE and the Gulf region.

Firmly grounded in principles of meritocracy and with a strong reputation for academic excellence, AUS has come to represent the very best in teaching and research, accredited internationally and recognized by employers the world over for creating graduates equipped with the knowledge, skills and drive to lead.

AUS values learners not driven only by academic success, but by those that embrace our dynamic campus life and embody our ideals of openness, tolerance and respect. This combination of academic excellence and community spirit ensures AUS is filled with world-class faculty and students, poised to become the innovators, thinkers, contributors and leaders of tomorrow.

PhD students are valued members of the broader AUS community who contribute to the university's dynamic campus life. The AUS campus includes world-class learning and research facilities, one of the finest libraries in the region, a health center and recreational programs, along with a full calendar of cultural events.

AUS has come to represent the very best in teaching and research, accredited internationally and recognized by employers the world over.



Visit: w.aus.edu
Email: ogs@aus.edu

Take the next step. Apply now.

w.aus.edu/apply



Top 50 under 50 years (2021)
Top 10 in Arab World for the past nine years (2024)
Top 550 universities in mathematics (2024)



Top five universities with the highest percentage of international students (2023)
Top 250 universities in Asia (2023)



First university in the GCC to be rated for sustainability in the Association for the Advancement of Sustainability in Higher Education's Sustainability Tracking, Assessment and Rating System