



WHY MS-MATHEMATICS AT IBA?

IBA's MS Mathematics program provides a rigorous foundation in pure and applied mathematics with a strong emphasis on analytical reasoning, abstract thinking, and computational skills. The program is designed for both aspiring researchers and professionals seeking to apply mathematical tools in diverse fields such as data science, finance, operations, and technology. With flexible class schedules and a research-driven curriculum, students are equipped to pursue careers in academia, research institutions, and industry sectors demanding high-level quantitative expertise.

- 30 Credit Hours
- Minimum Program Duration is 2 years
- Exposure to High-Performance Computing Facilities
- Access to Advanced Mathematical Tools
- Career Prospects in Academia
- Rigorous Training in Pure & Applied Mathematics



COURSE STRUCTURE

The MS Mathematics program at IBA consists of 30 credit hours, 24 through coursework and 6 via thesis. Students take core and elective courses, with a research thesis option for those meeting the eligibility criteria.

SEMESTER 1

- Computer Programming for Mathematics
- Topics in Analysis
- Topics in Algebra
- Elective I

SEMESTER 2

- Topology
- Topics in Linear Algebra
- Topics in Probability Theory
- Elective II

SEMESTER 3&4

- Literature Survey
- MS Thesis

ELECTIVE COURSES

The MS Mathematics electives at IBA provide a rigorous and diverse selection across both pure and applied mathematics. Students can choose from advanced topics such as Algebraic Geometry, Homological Algebra, Galois Theory, Stochastic Processes, Scientific Computing, and Machine Learning. This range supports specialization in high-level theoretical research as well as practical applications in data science, finance, and technology, preparing graduates for careers in academia, industry, or doctoral studies.

SCHOLARSHIPS, GRANTS & FINANCIAL ASSISTANCE

Installment Plan: The students can apply for 2-3 installments per semester. However, the installments must be paid within the same semester.

Need-based Financial Assistance: The IBA encourages aspiring students from diverse social backgrounds to enroll and study at the IBA.

Research & Teaching Assistantships (RA/TA): IBA offers part-time, paid opportunities for students to work as Research Assistants (RAs) or Teaching Assistants (TAs) as part of its financial assistance and academic enrichment initiatives.



SCHOOL OF MATHEMATICS & COMPUTER SCIENCE



IBA Karachi is one of Pakistan's premier institutions, known for academic excellence, interdisciplinary learning, and cutting-edge research across diverse fields.

The School of Mathematics and Computer Science (SMCS) is a rapidly growing academic unit at IBA, offering excellence in computing and mathematical sciences. With a highly qualified faculty comprising researchers and industry experts, SMCS integrates rigorous academics with practical exposure. The school houses advanced labs in Artificial Intelligence, Web Science, Big Data, and Telecommunications. Its programs in Computer Science and Mathematics provide a solid foundation in theory and application—preparing students for research, higher education, and impactful careers in the tech and data-driven economy.



ACADEMIC ENVIRONMENT

ADVANCED MATHEMATICAL TRAINING

The MS Mathematics program at IBA equips students with strong theoretical foundations and analytical skills across pure, applied, financial, and computational mathematics, preparing them for academic and industry roles.

RESEARCH-DRIVEN APPROACH

Students benefit from hands-on research experience and access to faculty-led projects in areas like algebra, geometry, scientific computing, and machine learning, encouraging original thinking and inquiry.

TECHNOLOGICAL & COMPUTATIONAL EDGE

Students gain practical exposure to modern computational tools and software, fostering cross-disciplinary applications and readiness for advanced research or doctoral studies.



CAREER OPPORTUNITIES

Graduates of the MS Mathematics program are equipped for diverse and impactful roles across academia, research, finance, and technology sectors, including:

- Data Scientist / Analyst
- Quantitative Analyst (Quant)
- Cryptographer / Cybersecurity Analyst
- Mathematical Modeler in Engineering
- Algorithm Developer
- Financial Risk Analyst

ELIGIBILITY CRITERIA

■ Minimum 16 years of education in Mathematics, Physics, Computer Science, Statistics, or BE, with at least 4 years at an HEC-recognized university or degree-awarding institute.

■ A minimum CGPA of 2.5 out of 4.0 or 60% marks in the last degree (percentage applicable only if CGPA is not available). Equivalency claims are subject to HEC evaluation.

APTITUDE TEST EXEMPTION

Minimum score of 600 on the GMAT, or a GRE score of 160 in quantitative and 150 in verbal.



https://mathematics.iba.edu.pk/ms_mathematics.php

FOR MORE INFORMATION



Main Campus

University Enclave, University Road,
Karachi - 75270 Pakistan
Phone : +92-(21) 3810-4700

www.iba.edu.pk

+92 21 111 422 422

City Campus

Plot # 68 & 88 Garden / Kayani
Shaheed Road, Karachi - 74400 Pakistan
Phone : +92-(21) 3810-4701

[f](#) [X](#) [in](#) [ig](#) [yt](#) [td](#) [ibakhiofficial](#)



SCHOOL OF MATHEMATICS & COMPUTER SCIENCE

MS - MATHEMATICS

THEORY · TOOLS · TRANSFORMATION

GRADUATE PROGRAM