

Department of Mathematics

Mission

The Mathematics Department aims to deliver top-quality education and research, equipping students with essential analytical skills for diverse careers and fostering an inclusive, innovative academic community.

Program Offered: Bachelor of Science in Mathematics

Faculty Members, Department of Mathematics

Dr. Tariq Abbas	Professor	Ph.D Mathematics, Islamia College University, Peshawar
Dr. Azhar Ali	Associate Professor	Ph.D Mathematics, Islamia College University, Peshawar
Dr. Haroon-ur-Rasheed	Associate Professor	Ph.D Mathematics, Abdul Wali Khan University, Mardan
Mr. Mumtaz Khan	Associate Professor	M.Phil Maths, Strathclyde University
Dr. Shahid Mahmood	Associate Professor	Ph.D Mathematics, Abdul Wali Khan University, Mardan
Ms. Asmarah Kanwal	Assistant Professor	M.Sc Maths, University of Peshawar
Mr. Muhammad Jebran Khan	Assistant Professor	MS Mathematics, Bacha Khan University, Charsadda

Bachelor of Science in Mathematics

Program Code	220
Number of Courses	45 + FYP
Credit Hours	132

Minimum Duration	8 Semesters, 4 Years
Maximum Duration	16 Semesters, 8 Years
Minimum CGPA Required To Earn Degree	2.00

Eligibility:

Candidates having F.Sc (Pre-Engineering/ Computer Science) or A-Levels with an Equivalency Certificate from IBCC Islamabad with at least 50% Marks or an equivalent certificate from a recognized institution are eligible to apply.

Candidates need to pass an Entry test/apptitude interview conducted by the university.

Program Objectives:

The objectives of BS in mathematics program are to prepare graduates with enhanced skills, knowledge and attributes that will be needed for a successful career and professional accomplishments after graduation. The program aims to produce graduates who:

- Have an appropriate combination of theoretical knowledge and practical skills to advance professionally in mathematics and related fields.
- Are able to use mathematical tools and language to understand the physical world around us.
- Are able to adapt to and succeed in a dynamic global environment.
- Are prepared to participate in lifelong learning opportunities.
- Are prepared for a professional career in education, or in business, industry and research institutions.
- Are prepared to continue formal education and obtain advanced degrees in mathematics or related fields.
- Aspire to evolve as integral part of society through their knowledge and professional skills.

Program Outcomes

At the end of the BS Program in Mathematics, students will be able to:

- Acquire knowledge of the variety of mathematical areas and their interrelation.
- Acquire the mathematical knowledge and skills necessary for success in their program or career.
- Develop the ability to read, discuss, and speak about mathematics.
- Develop the ability to work both independently and collaboratively on mathematical problems.
- Acquire knowledge of the roles of intuition, formalization, and proof in mathematics.
- Develop problem-solving skills.
- Develop the ability to write about mathematics.
- Develop critical thinking skills.

Scheme of Studies:

1st Semester

Course Code	Course Title	Cr. Hrs. 17
MAT 101	Calculus-1	3-0
GS 107	Introductory Mechanics	2-1
ENG 101	Functional Communication (English-I)	3-0
GS 123	Islamic Studies	2-0
IT 107	Applications of Information and Communication Technologies	2-1
MAT 103	Elements of Set Theory and Mathematical Logics	3-0
QT 100	Quran-e-Majeed Teaching (Audit Basis)	2-0

2nd Semester

Course Code	Course Title	Cr. Hrs. 16
MAT107	Calculus-II	3-0
MAT109	Discrete Mathematics	3-0
Gs201	Islamic History	2-0
GH 200	Pakistan Studies	2-0
MAT 204	Linear Algebra	3-0
ENG 290	Report Writing (English-II)	3-0

3rd Semester

Course Code	Course Title	Cr. Hrs. 16
MAT 202	Calculus-III (Multivariable Calculus)	3-0
MAT 214	Algebra-1 (Group Theory)	3-0
GE 203	Entrepreneurship	2-0
MAT 401	Complex Analysis	3-0
MAT 209	Elementary Statistics	3-0
MGT 106	Principles of Management	2-0

4th Semester

Course Code	Course Title	Cr. Hrs. 17
MAT 212	Affine and Euclidean Geometry	3-0
MAT 318	Algebra-II (Ring and Field)	3-0
GE 205	Civics and Community Engagement	1-1
MAT 206	Statistics and Probability Theory	3-0
MAT 309	Ordinary Differential Equations	3-0
MAT 220	Vector and Tensor Analyses	3-0

5th Semester

Course Code	Course Title	Cr. Hrs. 18
MAT 301	Real Analysis-1	3-0
MAT 303	Numerical Analysis-I	3-0
MAT 305	Methods of Mathematical Physics	3-0
MAT 307	Dynamics	3-0
MAT 322	Integral Equations	3-0
IT 344	Programming with MATLAB	2-1

6th Semester

Course Code	Course Title	Cr. Hrs. 18
MAT 312	Real Analysis-II	3-0
MAT 316	Partial Differential Equations	3-0
GS 341	Electricity and Magnetism	2-1
MAT 314	Numerical Analysis-II	3-0
MAT 340	Business Mathematics	3-0
RES 350	Field Experience	0-3

7th Semester

Course Code	Course Title	Cr. Hrs. 15
MAT 406	Basic Topology	3-0
MAT 403	Fluid Mechanics	3-0
MAT 405	Differential Geometry	3-0
RES 477	Research Methodology	3-0
MAT 441	Functional Analysis	3-0

8th Semester

Course Code	Course Title	Cr. Hrs. 15
MAT 420	Number Theory	3-0
MAT 444	General Topology	3-0
ECO 315	Econometrics	3-0
MAT 433	Graph Theory	3-0
RES 485	Final Year Project	0-3