Introduction

Preston University, Pakistan was established as School of Business and Commerce in 1984 to foster academic excellence. Preston University is seriously committed to improving the quality of technology and business education in Pakistan. Preston University is managed by a group of dedicated professionals and academicians who have committed their lives to the cause of higher education in Pakistan. Since its inception in 1984, Preston Network has imparted knowledge and skills to numerous individuals through many teaching programs. The experience at this university has played an important role in the professional and personal development of our students. The university will continue to fulfill its responsibilities to the society by creating and providing facilities for personal and professional growth of individuals who wish to make a career in the field of business, science and technology.

Charter and Recognition

Preston University, Kohat, NWFP has been chartered by the Govt. of NWFP through Ordinance No. LII of 2002, and is recognized by the Higher Education Commission (HEC), Government of Pakistan. Preston University, Karachi, has been chartered by the Government of Sindh through Sindh Act V of 2004, and is recognized by the Higher Education Commission (HEC), Government of Pakistan.

Bachelor of Science in Biology

(BS Biology)

Bachelor of Science in Biotechnology

(BS Biotechnology)

4 Years Honors

(Eight Semesters)

The objective of the BS Programs in Biology and Biotechnology is to let the students understand the fundamental principles of Biology and Biotechnology and related fields such as chemistry, biochemistry, and biodiversity, and their applications to real world problems. The students will also learn experimental techniques and methods and their applications in Biology and Biotechnology. The students will be exposed to design and conduct of experiments and learn to analyze the experimental data. Students will develop critical and rational reasoning so as to be able to work on complex problems and be able to develop careers in teaching, research, industry and government.

Requirements:

A student must achieve 144 semester credits for the award of a bachelors degree. Out of this total requirement, at least 60 credits must be completed in general education including sciences, mathematics, social sciences, language and humanities; minimum 48 credits in core subjects related to the degree program of the student.

Eligibility:

Holders of any of the following qualifications:

- High School Graduation (12 years of school education)
- Higher Secondary School Certificate or Intermediate (FSc)
- International Baccalaureate
- Minimum seven ‘O’ levels and two ‘A’ levels

Must have studied Biology, Botany, Zoology or Chemistry.

In addition to the minimum qualification, candidates are required to qualify Written Test and Interview for admission to the BS program.

Credit Requirements for BS Biology and Biotechnology Programs:

- General Education: 60 Credit Hours
- Core Courses: 48 Credit Hours
- Optional Courses: 24 Credit Hours
- Bachelors Project: 06 Credit Hours
- Internship: 06 Credit Hours
- Total: 144 Credit Hours

All elective courses are determined by the University at the beginning of each semester and are offered to the entire class. Students may not deviate from the block of optional courses offered by the University in any given semester.

In addition to the requirements for earned credits, a cumulative grade point average (GPA) of minimum 2.0 on a scale of 0.0 – 4.0 must be attained.
GENERAL EDUCATION - BS Biology and Biotechnology
(60 Semester Credits)

Mathematics, Sciences and Social Sciences
- Mathematics-I
- Mathematics-II
- Statistics-I
- Statistics-II
- General Chemistry
- Environmental Science
- Introduction to Psychology
- Introduction to Sociology
- Basic Management
- Introduction to Business
- Computer Applications

Language and Humanities
- English Grammar
- English Composition
- Business Communication-I
- Business Communication-II
- Public Speaking
- Ethics
- Effective Presentations
- Pakistan Studies or Commercial Geography
- Islamic Studies or Ethics

CORE COURSES - BS Biotechnology Program
(48 Semester Credits)
- Biology-I
- Biology-II
- Chemistry-I
- Chemistry-II
- Cell and Molecular Biology-I
- Cell and Molecular Biology-II
- Organic Chemistry-I
- Organic Chemistry-II
- Analytical Chemistry
- Genetics and Evolution
- Biotechnology-I
- Biotechnology-II
- Microbiology-I
- Microbiology-II
- Biochemistry-I
- Biochemistry-II

ELECTIVE COURSES - BS Biology Program
(24 Semester Credits)
- Developmental Biology
- Comparative Physiology
- Systems Neuroscience
- Cell Physiology
- Biotechnology
- Microanatomy
- Microphysiology
- Ecological Systems
- Human Ecology
- Immunology
- Biological Invasions
- Advanced Genetics
- Computational Biology

ELECTIVE COURSES - BS Biotechnology Program
(24 Semester Credits)
- Plant Biotechnology
- Health Biotechnology
- Environmental Biotechnology
- Genetic Engineering-I
- Genetic Engineering-II
- Advanced Genetics
- Genetic Diseases and Disorders
- Bioinformatics
- Food Biotechnology
- Genomics
- Downstream Technology

Master of Science in Biology (MSc Biology)
Master of Science in Biotechnology (MSc Biotechnology)

2 Years (Four Semesters)

The objective of the MSc Programs in Biology and Biotechnology is to let the students understand the fundamental principles of these fields in depth, develop analytical techniques, become proficient in experimentation to understand principles and concepts in Biology and Biotechnology, and develop a good command over the theoretical and experimental dimensions of these disciplines. The students will also learn computational techniques and principles and their applications in Biology and Biotechnology and allied fields. Students will develop critical and rational reasoning so as to be able to work on complex problems and be able to develop careers in teaching, research, industry and government.

Eligibility:

Holders of any of the following qualifications:
- Bachelors degree, BA or BSc, (14 years of education) with Biology, Zoology, Botany, or Genetics along with Chemistry or Biochemistry.
- Equivalent Bachelors degree with Biology, Botany, Zoology, or Genetics and Chemistry or Biochemistry or related subjects.

In addition to the minimum qualification, candidates are required to qualify Written Test and Interview for admission to the MSc program.

Requirements:

A student must achieve 66 semester credits for the award of a masters degree. Out of this total requirement, at least 30 credits must be completed in core subjects related to the degree program of the student, 30 credits for the elective courses, and 6 credits for a Masters Project.
Credit Requirements for MSc Biology and Biotechnology Programs:

- Core Courses: 30 Credit Hours
- Optional Courses: 30 Credit Hours
- Masters Project: 6 Credit Hours
- Total: 66 Credit Hours

All elective courses are determined by the University at the beginning of each semester and are offered to the entire class. Students may not deviate from the block of optional courses offered by the University in any given semester.

In addition to the requirements for earned credits, a cumulative grade point average (GPA) of minimum 2.2 on a scale of 0.0 – 4.0 must be attained.

**CORE COURSES - MSc Biology**

(30 Semester Credits)
- Principles of Biology
- Cell and Molecular Biology-I
- Cell and Molecular Biology-II
- Organic Chemistry
- Analytical Chemistry
- Principles of Genetics
- Microbiology-I
- Microbiology-II
- Research Proposals & Report Writing
- Bioethics

**CORE COURSES - MSc Biotechnology**

(30 Semester Credits)
- Biotechnology-I
- Biotechnology-II
- Cell and Molecular Biology-I
- Cell and Molecular Biology-II
- Organic & Analytical Chemistry
- Principles of Genetics
- Microbiology-I
- Microbiology-II
- Research Proposals & Report Writing
- Bioethics

**ELECTIVE COURSES - MSc Biology**

(30 Semester Credits)
- Developmental Biology
- Biotechnology
- Environmental Science
- Ecological Systems
- Immunology
- Human Genetics
- Human Ecology
- Advanced Genetics
- Computational Biology
- Microanatomy
- Microphysiology
- Bionanotechnology
- Bioinformatics

**ELECTIVE COURSES - MSc Biotechnology**

(30 Semester Credits)
- Agricultural Biotechnology
- Health Biotechnology
- Environmental Biotechnology
- Food Biotechnology
- Aquatic Biotechnology
- Genetic Engineering-I
- Genetic Engineering-II
- Advanced Genetics
- Human Genomics
- Biometry
- Downstream Technology
- Bionanotechnology
- Animal Breeding
- Plant Breeding

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**Financial Assistance / Scholarships**

Preston provides a variety of financial assistance according to the needs of the students who are unable to meet the full cost of their education. Preston also provides a specific scholarship (25% on admission fee and monthly tuition fee) to serving or retired military personnel belonging to Pakistan’s Armed Forces or the Police Department and to the employees of the Federal and Provincial Governments.

All scholarships are provided after an assessment based on the needs and merit of the applicant. No candidate can claim automatic award of scholarship on any basis. Scholarship once awarded to a student may be cancelled if the student is unable to maintain satisfactory academic performance. Scholarship application must be submitted on prescribed forms on or before the deadline for submission of application for admission.

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