

FACULTY OF SCIENCE & TECHNOLOGY

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DEPARTMENT OF BIOTECHNOLOGY

OVERVIEW

The Department was established in 2010 with an objective of imparting quality education in the multidisciplinary field of Biotechnology at both undergraduate and postgraduate levels. Our Department is located in close proximity to other Departments in the natural sciences - Chemistry, physics, statistics and mathematics - the institute of Pharmacy and state-of-the-art shared facilities, making LCWU a rich environment for our students and faculty. Department of Biotechnology has well-equipped research and computer labs. A Library in the department laden with latest books in order for our students to acquaint themselves with the latest knowledge and research. Scanning Electron Microscope, XRD, FTIR, GCMS, HPLC and many other resources, are close by. Our outstanding facilities and beautiful department provide an exceptional environment for teaching and research. Biotechnology, a major driving force towards a sustainable society. Sustainable production of biofuels, biochemicals, pharmaceuticals, clothes, food and other products is a necessary alternative to current production methods and requires massive education of biotechnologist. Biotechnologist work in all phases of society's development towards bio based economy. Biochemical and molecular biological tasks include mining of genes, modifying processes, or natural compounds from natural resources as well as design and construction of recombinant cell-factories. Fermentation tasks include design, optimization, and running of fermentation processes. Other tasks include purification and quality control of proteins and biochemical - and most importantly, the invention of new methods to use biotechnology for the benefit of society. All of these tasks require specialized biotechnologist that are educated in a combination of scientific research and industrial application. Biotech industry is an expanding billion-dollar industry offering a promising future for Biotechnologist whether employed in a large biotech company or starting up small companies as bio-entrepreneurs. Through the program, you will build upon your fundamental knowledge of biochemistry, protein and enzymology, microbiology, molecular biology, genetics, proteomics and fermentation process technology. You will learn to apply this knowledge on biotechnological problems, ranging from basic research issues to the development of new cell factories and the study of their performance in bioreactors. You will acquire the relevant competencies for collecting and analyzing wide-ranging types of data using statistics, bioinformatics, and mathematical models.

Some of our research groups focus on Health and Agricultural Biotechnology, while others explore open questions with Microbial Biotechnology, Industrial Biotechnology, Molecular Biology, Bioinformatics, Pharmaceutical Biotechnology, Bio-Nanotechnology, Genomics and Proteomics, Molecular Diagnostics and Virology. We are dedicated to developing the next generation of scholars in biotechnology and building an inclusive learning environment.

LEARNING OBJECTIVES

- To provide education that leads to comprehensive understanding of the principles and practices of biotechnology.
- To educate and make them up to date with the current scientific literature, computer programs and web information.
- To provide broad based training in technical skills in methods of biotechnology.



DEGREE PROGRAMS OFFERED

- BS Biotechnology (Regular/ Self Supporting)
- MS Biotechnology (Regular/ Self Supporting)
- PhD Biotechnology

FACULTY OF SCIENCE & TECHNOLOGY

- To empower students with the ability to think and solve problems in the field of biotechnology.
- To ensure students are able to effectively communicate with biotech and other interdisciplinary professionals.
- To produce responsible biotechnologists that can work within the interdisciplinary framework of biotechnology and related fields.
- To build strong foundation for future leaders of our country towards a more prosperous and a more developed Pakistan.

OUTCOMES

- Students will be able to demonstrate their knowledge of biotechnology concepts.
- Students will possess the technical background knowledge needed to support biotechnology research activity.
- Students will possess hands-on technical skills necessary for supporting biotechnology research activity.
- Students will be equipped with skills to work in teaching and research institutes, diagnostic labs or any Biotechnology industry.
- Students will be able to demonstrate the ability to apply research strategies to solve biotechnology problems.
- Students will be able to demonstrate the ability to communicate effectively with appropriate audiences with regard to field of biotechnology.
- Students will show understanding of management tools and concepts.
- Students will be able to demonstrate the ability to work effectively in teams.

BS PROGRAM

Eligibility criteria

- Female candidates having Intermediate (HSSC) / 'A' Level / Equivalent to F.Sc. Pre-medical, with at least 50% marks are eligible to apply for BS Program .
- All other requirements are as per university admission policy (Please see University eligibility criteria for BS admission)

Duration: 4 Years

Total Credit Hours: 136 CH

MS PROGRAM

Eligibility criteria

- 16 years of education i.e. BS/M.Sc. in Biotechnology, Botany, Biochemistry, Zoology, Environmental sciences, Agricultural sciences and Pharmacy, Homeopathic medicine, Medical Lab Technology or equivalent.
- The candidate must have obtained 2.5/4.00 CGPA in semester or 50% marks in annual system.
- Entry Test (50% qualifying Marks) and interview organized by University in mandatory for admission
- Candidates working in Government/semi-government institutions have to submit NOC from concerned organization.
- All other requirement as per University policy (Please see University criteria for MS)

Duration: 2 Years

Total Credit Hours: 36 CH

SPECIALIZATION OFFERED

- | | |
|--------------------------------|---------------------------|
| • Algal Biotechnology | • Bioinformatics |
| • Bio-Nanotechnology | • Genetic Engineering |
| • Health Biotechnology | • Human Genetics |
| • Industrial Biotechnology | • Microbial Biotechnology |
| • Pharmaceutical Biotechnology | • Plant Biotechnology |

Ph.D. Program

Eligibility criteria

- 18 years of education i.e. MS/ M.Phil. in Biotechnology, Botany, Biochemistry, Zoology, Environmental Sciences, Agricultural Sciences, Pharmacy, Homeopathic Medicine, Medical Lab Technology or equivalent.
- The candidate must have 3.00/4.00 CGPA in semester or first division in Annual system.
- Entry Test (70% qualifying Marks) and interview organized by University in mandatory for admission to Ph.D. Program.
- All other requirement as per University Policy (Please See University admission Eligibility Criteria for Ph.D.)
- Admission in Ph.D. program will be carried out twice a year, Spring and Fall depending on the availability of seats.

Duration: 3-5 Years

Total Credit Hours: 18 CH

FACULTY OF SCIENCE & TECHNOLOGY

SPECIALIZATION OFFERED

- Algal Biotechnology
- Genetic Engineering
- Industrial Biotechnology
- Plant Biotechnology
- Bioinformatics
- Health Biotechnology
- Microbial Biotechnology
- Bio-Nanotechnology
- Human Genetics
- Pharmaceutical Biotechnology

List of Faculty:

- **Prof. Dr. Shagufta Naz**, Professor, M.Sc. Botany (PU), Ph.D. Botany with Specialization in Plant Biotechnology (PU).
- **Prof. Dr. Mehwish Iqtedar**, Chairperson, Tenured Professor, M.Sc. Zoology (PU), Ph.D. Zoology with Specialization in Microbiology (PU).
- **Prof. Dr. Faiza Saleem**, Tenured Professor (TTS), M.Sc. Zoology (PU), Ph.D. Biological Sciences with Specialization in Micro- and Molecular Biology (PU), Postdoc Molecular Biology (PU).
- **Dr. Roheena Abdullah**, Tenured Associate Professor, M.Sc. Botany (PU), M.Ed., M.Phil. (GCU), Ph.D. Botany with Specialization in Industrial Biotechnology (GCU).
- **Dr. Neelma Munir**, Tenured Associate Professor, M.Sc. Botany (PU), Ph.D. Botany with Specialization in Plant Biotechnology (PU).
- **Dr. Rasheeda Bashir**, Tenured Associate Professor, M.Sc. Zoology (GCU), M.Phil. Zoology (GCU), Ph.D. Microbiology and Molecular Genetics (PU).
- **Dr. Afshan Kaleem**, Tenured Associate Professor, MS Biochemical Engineering (Denmark), Ph.D. Biotechnology (GCU) with Specialization in Proteomics and Bioinformatics.
- **Dr. Farheen Aslam**, Assistant Professor (TTS), M.Sc. Biochemistry (PU), Ph.D. Biological Sciences with Specialization in Biochemistry and Molecular Biology (PU).
- **Dr. Saiqa Ilyas**, Assistant Professor (BPS), M.Sc. Botany (GCU), M.Phil. Biotechnology (GCU), Ph.D. Botany with Specialization in Plant Biotechnology (LCWU).
- **Dr. Mahwish Aftab**, Assistant Professor (Adhoc), BS (Hons) Zoology (PU) (Gold Medalist), M.Phil. Molecular Biology (CEMB, PU) (Gold Medalist), Ph.D. Biotechnology (LCWU).
- **Dr. Rukhama Haq**, Assistant Professor (Adhoc), BS (Hons.) Botany (LCWU), MS Botany (LCWU), Ph.D. Biotechnology (LCWU).

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DEPARTMENT OF BOTANY

OVERVIEW

Botany as subject is being taught to College classes since 1922 at LCWU. B.Sc Botany was started in 1956. M.Sc. Botany was launched in 1994 by the endless efforts of then, Head of the Department Prof. Mrs. Khatoon Zahoor. A four year BS degree program was initiated in 2005, whereas MS, MS leading to Ph.D and Ph.D programs were started in 2009.

Mrs. Dilara Muqueet, Ms. Prem Madan, Prof. Mrs. Khatoon Zahoor, Mrs. Shamim Sattar , Prof. Mrs. Rashida Zafar, Prof. Mrs. Zafar Hussain and Prof. Dr. Farah Khan served as former HODs from 1956 to 2022. Ms. Prem Madan would always be remembered as a legendary teacher and HOD. Currently Prof. Dr. Zubaida Yousaf is working as the Chairperson of the Botany Department since January 2022.

Mission and Vision

Our mission and vision is to educate and train the youth to apply the basic knowledge of Plant Sciences related to broad horizons of Agriculture, Biotechnology, Ecology, Horticulture, Microbiology, Molecular Biology, Molecular Taxonomy, Mycology, Nano biotechnology, Plant Tissue Culture, Taxonomy, Virology and other related fields. We are striving to achieve excellence to produce professionally trained graduates in line with increased productivity and skills requirements.

Learning Objectives

- The overarching aim of Botany Department is to produce Graduates, Post Graduates & Doctorates with better understanding of plant sciences and its applications.
- We are also determined to provide well skilled female graduates of Plant Sciences, according to the requirement of the job market on national and international levels and to give a new get up to Botany as a subject, making it more appreciable and attractive for the human resource sector. Our basic objective is to produce post graduate scholars with better understanding of Plant Sciences and their applications in society.
- Department of Botany intends to get its students well groomed, creative and confident to step forward in the practical life.
- We aim to produce and train national and international scholars and researchers, who are not only able to transfer their knowledge to society but can also compete on national and international levels using their innovative and evolutionary research work.

Outcomes

- To produce graduates with dynamic and research oriented approach who are able to get incorporated in reputable national and international universities, institutes and companies for further education/research or job.
- To develop and train Human resource in current job oriented fields of Plant Sciences.
- To develop and train human resource in the field of Plant Sciences, making it job and business oriented.
- To generate self- motivated scholars who can compete at international level by making revolutionary development in Plant Sciences.
- To prepare the skilled and professional Pakistani female youth with high moral values and ethics.



DEGREE PROGRAMS OFFERED

- BS Botany (Regular/ Self Supporting)
- MS Botany (Regular/ Self Supporting)
- PhD Botany

FACULTY OF SCIENCE & TECHNOLOGY

Job Opportunities

- Teaching at various public and private sector Educational Institutes/Universities.
- Researchers at different scientific national and international research institutes.
- Employment at national and international Agriculture, Horticulture and Biotechnological Institutions/Departments and Companies.

BS BOTANY PROGRAM

Eligibility Criteria

- Female candidates having Intermediate (HSSC) / 'A' Level / Equivalent to F.Sc. Pre-medical, with at least 50% marks are eligible to apply for BS Program .

Duration: 4 Years Total Credit Hours: 136 CH

MS BOTANY PROGRAM

Eligibility Criteria

- BS Botany or Equivalent (16 Years education)
- The candidate must have obtained 2.5/4.00 CGPA in semester or 50% marks in annual system.
- Entry Test (50% qualifying Marks) and interview organized by University in mandatory for admission.
- All other requirement as per University policy (Please see University criteria for MS)

Duration: 2 Years Total Credit Hours: 36 CH

Ph.D. BOTANY PROGRAM

Eligibility Criteria

- MS Botany or Equivalent (18 Years education)
- The candidate must have 3.00/4.00 CGPA in semester or first division in Annual system.
- Entry Test (70% qualifying Marks) and interview organized by University in mandatory for admission to Ph.D. Program.
- All other requirement as per University Policy (Please See University admission Eligibility Criteria for Ph.D.)
- Candidates working in Government/semi-government institutions have to submit NOC from concerned organization.
- Admission in Ph.D. program will be carried out twice a year, Spring and Fall depending on the availability of seats.

Duration: 3-5 Years Total Credit Hours: 18 CH

Area of Specialization

- | | | |
|--|----------------------|-----------------------------|
| • Molecular Genetics/Molecular Biology | • Biotechnology | • Phyto-chemistry |
| • Fungal Biotechnology | • Medicinal Plants | • Biochemistry |
| • Molecular Taxonomy | • Plant Physiology | • Plant Taxonomy |
| • Plant Tissue Culture | • Molecular Mycology | • Plant Fungal Interactions |
| • Nanobiotechnology | • Molecular Virology | |

List of Faculty:

- **Prof. Dr. Zubaida Yousuf**, Chairperson, Tenured Professor, M.Sc. Botany (UAAR, Pk.), Ph.D. with specialization in Molecular Taxonomy (QAU, Pk.), Post Doc. with specialization in medicinal Plants Genomics and Genetics (China).
- **Dr. Sumera Iqbal**, Tenured Associate Professor, M.Sc. Botany (UAAR, Pk.), Ph.D. Plant Sciences with specialization in Plant Physiology (QAU, Pk).
- **Dr. Shabnam Shaheen**, Tenured Associate Professor, M.Sc. Botany (UAAR, Pk.), Ph.D Plant Sciences with specialization in Plant Taxonomy (QAU, Pk.), Post Doc. with specialization in medicinal Plants (Malaysia).
- **Dr. Khajista Jabeen**, Tenured Associate Professor, M.Sc. Botany, Ph.D. Mycology and Plant Pathology with specialization in Fungal Biotechnology (PU, Pk).
- **Dr. Sumera Javad**, Tenured Associate Professor, M.Sc. Botany Gold Medalist (LCWU, Pk.), Ph.D. Botany with specialization in Plant Tissue Culture and Biochemistry (LCWU, Pk). Post Doctorate from Cornell University, USA.

FACULTY OF SCIENCE & TECHNOLOGY

- **Dr. Sobia Ilyas**, Tenured Associate Professor, BS Hons. Botany, Ph.D Botany with specialization in Molecular Mycology, Plant Fungal Interaction, Fungal Biology (PU, Pk.), Ph.D. IRSIP Fellowship (USA).
- **Dr. Smaina Sarwar**, Assistant Professor, M.Sc. Botany, Ph.D. Botany with specialization in Molecular Mycology/Fungal Biology (PU, Pk.), Ph.D. IRSIP Fellowship (UK).
- **Dr. Mobina Ulfat**, Assistant Professor, M.Sc. Botany, M.Phil Botany with specialization in Plant Physiology (UAF, Pk), Ph.D Botany with specialization Molecular Plant Stren Physiology (GCU, Lahore, Pk)
- **Dr. Sana Khalid**, Assistant Professor, M. Sc Hons. Gold medalist (Botany), M. Phil (PU. Pk) Ph.D. (PU. Pk) with specialization in Molecular Plant Virology, (On Study Leave).
- **Dr. Kiran Shahzadi**, Assistant Professor, Adhoc, M.Sc. Botany, M.Phil Biotechnology (GCU, Pk.), Ph.D. Botany with specialization in Plant Biotechnology (LCWU, Pk).
- **Dr. Riffat Siddique**, Assistant Professor, Adhoc, M.Sc. Gold medalist Botany (PU, Pk.) Ph.D. Botany with specialization in Molecular Virology (LCWU, Pk).
- **Dr. Hannan Mukhtar**, Assistant Professor, Adhoc, M.Sc. Botany (PU, Pk.) Ph.D. Botany with specialization in Plant Molecular Genetics (LCWU, Pk).
- **Dr. Amina Tariq**, Assistant Professor, Adhoc, M.Sc. Botany, M.Phil Environmental Sciences (GCU, Pk.) Ph.D. Botany Gold medalist with specialization in Biotechnology (LCWU, Pk).
- **Dr. Qurat-ul-Ain**, Assistant Professor IPFP, M.Sc. Botany (PU, Pk.) Ph.D. Botany with specialization in Environmental Biotechnology (PU, Pk).
- **Dr. Arusa Aftab**, Lecturer, M.Sc. Gold Medalist, Botany (GCU, Pk.), M.Phil Botany (GCU, Pk) Ph.D. Botany with specialization in medicinal plants, genetic + genome (LCWU, PK).
- **Dr. Zaryab Khalid Sial**, Lecturer, MS Botany, Ph.D. Botany with specialization in Molecular Genetic (LCWU, Pk).

Supporting Staff

- **Ms. Shaheen Qasim**, Senior Lecture Assistant
- **Mr. Muhammad Wasim**, Junior Clerk
- **Ms. Tayyiba Khaliq**, Lecture Assistant

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DEPARTMENT OF CHEMISTRY

OVERVIEW

Chemistry department is one of the oldest department of LCWU. Graduate program was commenced in 1958 while B.Sc Honours (3 years), M.Sc. Chemistry and PhD programs were offered in 2003 after upgradation of College to university. Currently BS (4 years), MS (2 years) (regular and self-support), and Ph.D. programs are being offered by the department. Our competent faculty members are working in the fields of analytical, biochemistry, inorganic, organic and physical chemistry. Chemistry department is progressing towards excellence in education and research under guidance of Higher Education Commission, Pakistan. Prof. Dr. Bushra Naseem, Chairperson of Chemistry Department endeavors that the department be recognized nationally as a model institute where students learn and contribute indigenously to the society. To achieve this vision, the department is committed to provide best educational environment by:

- Frequent interactions and collegial exchange of ideas between faculty and students
- Independent thought and high ethical standards in research
- Use of modern educational technology in lectures and laboratory courses

However, our actual pride is our female students who are expected to be transformed into role models for society as good homemakers and will also occupy the best position in academia, chemical and pharmaceutical industries at both national and international levels.

LEARNING OBJECTIVES

The department aims to disseminate a systematic, fundamental and comprehensive knowledge of various fields of chemistry to all levels of students:

- The students can communicate successfully in both written and oral formats.
- They can perform effectively in the workplace and have the ability to work and make effective use of a wide variety of current technologies.
- The student can express the ability to think critically, conceptually and rationally, can gather, interpret and analyze data to give inferences.

OUTCOMES

After completion of the studies, students will:

- Reveal first rate laboratory skills and techniques including the use of different analytical instruments.
- Demonstrate satisfactory way of thinking to chase their career objectives and further professional training at national and international level.
- Have good written and communication skills
- Show analytical approach towards life, can organize, analyze the raw data and use scientific methods to get results and cope with different problematic situations.

BS CHEMISTRY

The BS program is designed for students planning graduate study in chemistry and seeking career as professional chemists.



DEGREE PROGRAMS OFFERED

- BS Chemistry
- MS Chemistry (Regular/ Self-support)
- PhD Chemistry

FACULTY OF SCIENCE & TECHNOLOGY

Eligibility criteria

- Female candidates having Intermediate (HSSC) / 'A' Level / Equivalent to F.Sc. Pre-Medical/ F.Sc. Pre-Engineering, with at least 50% marks are eligible to apply for BS Program .
- All other requirements as per university policy (please see university admission criteria for BS)

Duration: 4 years

Total Credit Hours: 136 CH

GROUPS

- Chemistry, Botany, Zoology
- Chemistry, Physics, Maths

MS CHEMISTRY (REGULAR AND SELF-SUPPORT)

The master of sciences in chemistry is designed for individuals with a bachelor's degree in chemistry who wish to advance their careers in the local chemical/ pharmaceutical industries, educational and research institutes.

Eligibility criteria

- 16 years of education (B.S or M.Sc in relevant fields) or equivalent.
- The candidates must have obtained 2.5/4.00 CGPA in semester system or 50% marks in annual system.
- Entry test (50% qualifying marks) and interview organized by university is mandatory for admission.
- All other requirements as per university policy (Please see University admission criteria for MS).

Duration: 2 years

Total Credit Hours: 36 CH

SPECIALIZATION OFFERED

- Organic Chemistry
- Physical Chemistry
- Analytical Chemistry
- Inorganic Chemistry
- Bio Chemistry

Ph.D. CHEMISTRY

The Doctor of Philosophy in chemistry program provides a broad foundation in chemistry that stresses scientific reasoning and analytical problem solving with a molecular perspective. The program is designed to produce well qualified chemists for educational institutions, government agencies, and industrial and business entities.

Eligibility criteria

- Minimum 18 years of education M.Phil. / MS in Chemistry.
- The candidates must have obtained 3.00/4.00 CGPA in semester or 60% marks in annual system.
- Entry test (70% qualifying marks) and interview organized by university is mandatory for admission in Ph.D. program.
- Candidates working in Government/semi-government institutions have to submit NOC from concerned organization.
- All other requirements as per university policy (Please see university admission criteria for Ph.Ds.).
- Admissions in Ph.D. program will be carried out twice a year, Spring and Fall depending on the availability of seats.

SPECIALIZATION OFFERED

- Organic Chemistry
- Physical Chemistry
- Analytical Chemistry
- Inorganic Chemistry
- Bio Chemistry

List of Faculty:

- Prof. Dr. Bushra Naseem, Chairperson Department of Chemistry, Tenured Professor, M.Phil., Ph.D. (QAU), post DOC Bristol, UK
- Prof. Dr. Saadia Rashid Tariq, Tenured Professor, M.Phil., Ph.D. (QAU)
- Prof. Dr. Erum Akbar Hussain, Tenured Professor, M.Sc., Ph.D. (HEJ research institute of chem. KU)

FACULTY OF SCIENCE & TECHNOLOGY

- **Dr. Shahida Shujaat**, Tenured Associate Professor, M.Phil. (QAU), Ph.D. (HEJ research institute of chem. KU) post DOC Uni of Cincinnati, Ohio, USA
- **Dr. Sana Ahmad**, Tenured Associate Professor, M.Sc. Hons (PU), Ph.D. (Université Bordeaux 1 France)
- **Dr. Abida Yasmeen**, Assistant Professor (TTS), M.Sc., (UAF), M.Phil., Ph.D. (QAU)
- **Dr. Fozia Iram**, Assistant Professor (TTS), M.Phil. (GCU), Ph.D. (PU)
- **Dr. Shahnaz**, Assistant Professor (TTS), M.Sc., Ph.D. (HEJ)
- **Dr. Rehana Kousar**, Assistant Professor (TTS), M. Phil (BZU Multan), Ph.D. (South Korea)
- **Dr. Rabia Raza**, Assistant Professor (TTS)
- **Dr. Abida Yasmeen**, Assistant Professor
- **Ms. Syeda Nazish Arshad**, Lecturer, MS (LCWU)
- **Ms. Touseef Kazmi**, Lecturer, MS (LCWU) (on study leave)
- **Ms. Saneesa Ata-ul-Haq**, Lecturer
- **Ms. Nazish Saleem**, Lecturer
- **Ms. Hadeeqa Aslam**, Lecturer
- **Dr. Rabia Babar**, Lecturer

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DEPARTMENT OF ENVIRONMENTAL SCIENCE

OVERVIEW

The 21st century promises for both an exciting time and a challenging world to live in. Many of the most complex challenges will be to aware the masses about the significance & need to shift toward the environmental perspectives. Meeting these challenges will require problem solving abilities based on natural, social and management sciences, and other disciplines. Environmental Science is the application of a combination of scientific disciplines that deal with issues and questions regarding environmental and socio-economic problems. Environmental degradation, energy crisis, water scarcity, food security; mitigation and adaptation to climate change impacts are the major areas of concern in today's world. The economy is moving towards "Green or low Carbon Economy" based on Carbon neutrality and valuation of ecosystem services. Environmental pollution, depletion of resources and disintegration of ecological functions are of global, regional and local concerns. To prevent continued environmental degradation and the decline of human society, interactions between human and the environment have to be in harmony. This is achievable through an integrated, holistic approach encompassing natural, social and management sciences with political support and technological, economic and social interventions. This will require qualified and trained human resource and so is the objective of Environmental Science Department.

Environmental science department takes pride in the fact that since its inception; over six hundred students have graduated obtaining their BS, M.Sc. and MS degrees and providing services to various echelons of society which indicates the success of our program and the trust of the stakeholders in this department.

Environmental Science department is actively involved in the restoration of indigenous flora with community participation, creating awareness about the role of ecosystems in human health and local community capacity building regarding conservation of indigenous vegetation. Graduates of Environmental Science Department, LCWU are working with various Eco-Laboratories, Institutes, Organizations, NGO's and Industries of UK, USA, Kuwait, Saudi Arabia and Pakistan etc. It is a great success of Environmental Science Department that majority of graduates have been successful to get the job right after passing out from the University.

Our graduates have opportunity to opt career in the Environmental Laboratories, Universities, Health Department, Agricultural Department, Environmental Law, Industries, Research Organizations, NGO's Environmental Engineering, GIS/Mapping, and Meteorology Department. Graduates also have opportunities in the sectors including Environmental Management, Research Regulations and Policy Development of Government.

Learning Objectives

- Environmental Science is a decision support science, which has emerged as a result of convergence of a wide range of disciplines, therefore, its scope is wide as inter and multi-disciplinary field of knowledge. Its ambit is as wide as environment itself.
- The aim of undergraduate degree programme in the discipline of Environmental Science is sustainable development and to develop human resource equipped with knowledge to support decisions, skills needed to mitigate impacts of climate change or adapt necessary measures and attitude to contribute in development of sustainable life style in the society and to develop green economy.



DEGREE PROGRAMS OFFERED:

- BS Environmental Science (Regular/ Self-Supporting)
- MS Environmental Science (Regular/ Self-Supporting)
- PhD Environmental Science

FACULTY OF SCIENCE & TECHNOLOGY

BS ENVIRONMENTAL SCIENCE

Eligibility Criteria

- Female candidates having Intermediate (HSSC) / 'A' Level / Equivalent to F.Sc. Pre-medical or Pre-Engineering with at least 50% marks are eligible to apply for BS Program .
- All other requirements as per university policy (please see university admission criteria for BS).

MS ENVIRONMENTAL SCIENCE

Eligibility Criteria

- All the applicants with minimum 16 years of educations (BS/M.Sc./Equivalent) in the subject of Environmental Science/ Botany/ Chemistry/Zoology/Physics/Agriculture/MBBS/Pharmacy/Geography are eligible.
 - The candidate must have obtained 2.5/4.00 CGPA in semester or 50% marks in annual system.
 - Entry Test (50% qualifying Marks) and interview organized by University in mandatory for admission
 - Candidates working in Government/semi-government institutions have to submit NOC from concerned organization.
 - All other requirement as per University policy (Please see University criteria for MS)
- Duration: 2 Years Total Credit Hours: 36 CH

Ph.D. Programme

Eligibility Criteria

- All the applicants with minimum 18 years of education (M.Phil./MS/Equivalent) in the subject of Environmental Science / Botany/Zoology/Chemistry/Physics/Agriculture/MBBS/Pharmacy/Geography/ Wild life and Fisheries are eligible.
- The candidate must have 3.00/4.00 CGPA in semester or first division in Annual system.
- Entry Test (70% qualifying Marks) and interview organized by University in mandatory for admission to Ph.D. Program.
- All other requirement as per University Policy (Please See University admission Eligibility Criteria for Ph.D.)
- Admission in Ph.D. program will be carried out twice a year, Spring and Fall depending on the availability of seats.

Specializations Offered

- Sustainable Water Resource Management
- Biodiversity
- Climate Change
- Environmental Biotechnology
- Environmental Monitoring
- Environmental Green Chemistry
- Environmental Toxicology
- Environmental Nanotechnology
- Solid waste management
- Alternate Energy Resources
- Bio-fuel Techniques
- Applied Microbiology
- Environment and Health
- Occupational Health & Safety
- Conservation
- Environmental Plant Pathology
- Phytochemistry
- Soil and Environment

FACULTY OF SCIENCE & TECHNOLOGY

List of Faculty:

- **Prof. Dr. Arifa Tahir**, Chairperson, Tenured Professor, Ph.D. Botany (PU). Area of Specialization: Environmental Microbiology, Climate Change/Conservation, Water Treatment Technologies.
- **Dr. Nadia Ghani**, Tenured Associate Professor, Ph.D. Zoology (PU). Area of Specialization: Environmental Toxicology.
- **Dr. Numrah Nisar**, Tenured Associate Professor, Associate Professor, Ph.D. Cell and Molecular Biology, (UK). Area of Specialization: Environmental Monitoring, Environmental Biotechnology.
- **Dr. Ammara Fatima**, Tenured Associate Professor, Ph.D. Plant Nutrition (JLU, Germany). Area of Specialization: Environmental Biotechnology, Environmental Stress Physiology.
- **Dr. Sofia Nosheen**, Assistant Professor, Ph.D. Environmental Chemistry (UAF). Area of Specialization: Environmental Chemistry, Sustainable, Green Chemistry.
- **Dr. Moneeza Abbas**, Assistant Professor (TTS), Ph.D. Zoology (LCWU). Area of Specialization: Environment and Health, Environmental Pollution and Management.
- **Dr. Amina Abrar**, Assistant Professor (Adhoc), Ph.D. Environmental Science (LCWU) (Bronze Medalist LCWU). Area of Specialization: Environmental Monitoring, Environmental Impact Assessment, Environmental Health.
- **Dr. Hina Chaudhry**, Assistant Professor (Adhoc), Ph.D. Environmental Science (LCWU). (Gold Medalist LCWU), Area of Specialization: Environmental Monitoring, Occupational Health, Climate Change, Conservation.
- **Dr. Zaira Ahmad**, Lecturer, (Silver Medalist LCWU), Ph.D. Environmental Science (PU). Area of Specialization: Conservation Biology, Sustainable Development
- **Ms. Zahra Asghar**, Lecturer, M.Sc. MS. Applied Environmental Science, (LCWU), (Bronze Medalist LCWU), (Ph.D. in progress LCWU), Area of Specialization: Environmental Monitoring, Environment and Health.
- **Mrs. Saima Atif**, Lecturer, M.Sc. MS. Applied Environmental Science, (LCWU), (Ph.D. in progress LCWU). Area of Specialization: Environmental Monitoring, Environment and Health, Occupational Health and Safety
- **Ms. Fakhra Aslam**, Lecturer, M.Sc. (Honors) Environmental Science (PU), MS. Applied Environmental Science, (LCWU), (Ph.D. in progress LCWU). Area of Specialization: Solid Waste Management, Environmental Monitoring.
- **Ms. Rabia Shehzadi**, Lecturer, M.Sc., MS. Applied Environmental Science, LCWU), (Ph.D. in progress LCWU). Area of Specialization: Waste Water Treatment, Disaster Risk Assessment.

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DEPARTMENT OF GEOGRAPHY

OVERVIEW

The Department of Geography has the honor to be one of the oldest departments of Lahore College for Women University, Lahore. Right from the beginning, Geography department has been producing knowledgeable students at intermediate and graduate levels. The Department owes a great deal of gratitude to the eminent teachers and professors like Mrs. Bilquis Qureshi, Dr. Maryam Khan, Ms. Ruqia Rafique, Mrs. Akram, Mrs. Saeeda Karamat, Mrs. Sadiqa Nasir and Mrs. Bushra Sharif who contributed towards the progress and betterment of department and worked as the Head of the department respectively. The department launched BS (4-Year) Degree Program in 2011. Presently, Dr. Aysha Hanif (Faisal) is working devotedly as the Incharge of the Department. As a step towards academic development, department aims to start MS program shortly.

Learning Objectives

- To create understanding of Physical and cultural environment.
- To develop skills for analytical study of man-environment interaction.
- To develop skills in map reading and cartography.
- To introduce simple quantitative methods in geography.
- To enhance understanding of physical and cultural milieu of Pakistan and its provinces.
- To create understanding of GIS and Remote Sensing, among the students.
- To enable students to carry out research projects independently, including data collection, data processing and data presentation in a report, thesis, ACP (Active Citizenship Program).
- To enhance communication and presentation skills.

Outcomes

- Understand Geography as a subject so that they become professionals and have the capability to adapt to any challenge that may offer within their careers.
- Work in environmental based organizations e.g., EPA, that deal with the results of man-environment interaction and methodologies to combat them.
- Become efficient map interpreters.
- Apply quantitative techniques in geography and be able to draw conclusions.
- To understand Pakistan's geographical landscape and economic conditions, and serve in institutions like, Statistical Bureau, Dept. of Demography etc.
- Understand the conceptual framework of spatial and attribute data models, and perform complex analysis and presenting the results using Arc GIS and other advanced software.
- Achieve educational standards, precisely writing and presentation skills.

Eligibility Criteria for BS Geography

- Female candidates having Intermediate (HSSC) / 'A' Level / Equivalent to F.A, FSc, I.Com or Equivalents with at least 50% marks are eligible to apply for BS Program
- All other requirements as per university admission policy (please see university eligibility criteria for BS admission).



DEGREE PROGRAMS OFFERED

- BS Geography (Regular/ self-supporting)
- MS Geography
- PhD Geography

FACULTY OF SCIENCE & TECHNOLOGY

MS Geography

Eligibility criteria

- Female candidates having 16 years of education, i.e. BS Geography or Equivalent in the subject such as GIS, Environmental Sciences and City and Regional planning are eligible to apply.
- The candidate must have obtained 2.5/4.00 CGPA in semester or 50% marks in annual system.
- Entry Test (50% qualifying Marks) and interview organized by University in mandatory for admission
- Candidates working in Government/semi-government institutions have to submit NOC from concerned organization.
- All other requirement as per University policy (Please see University criteria for MS)

Duration: 2 Years

Total Credit Hours: 36 CH

Ph.D. Geography

Eligibility criteria

- Female candidates having 18 years of education, i.e. MS Geography or Equivalent in the subject such as GIS, Environmental Sciences and City and Regional planning are eligible to apply.
- The candidate must have 3.00/4.00 CGPA in semester or first division in Annual system.
- Entry Test (70% qualifying Marks) and interview organized by University in mandatory for admission to Ph.D. Program.
- All other requirement as per University Policy (Please See University admission Eligibility Criteria for Ph.D.)
- Admission in Ph.D. program will be carried out twice a year, Spring and Fall depending on the availability of seats.

Duration: 3-5 Years

Total Credit Hours: 18 CH

List of Faculty:

- **Dr. Aysha Hanif(Faisal)**, In charge Geography Department , Assistant Professor, Ph.D. (PU), M.Sc. Geography (PU), M.Phil. (CSAS) P.U, Diploma (GIS) PIMS
- **Dr. Nausheen Mazhar**, Assistant Professor, Ph.D. Geography (Pu) Fellowship from University of Leeds, U.K, M.Sc. (P.U), M.A (Eng. Lit.) P.U, PGD (GIS) PIMS, M.S (GCUL)
- **Dr. Sahar Zia**, Assistant Professor, Ph. D. Geography (PU), BS Geography (P. U), M.Phil. Geography (P.U)
- **Ms. Rehana Mehar Ali**, Lecturer, BS (Hons) Geography (GCU) M.S Geography (GCUL)
- **Ms. Amna Afzal**, Lecturer, M.Sc. (P. U) M.S Geography (GCUL)

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DEPARTMENT OF MATHEMATICS

OVERVIEW

Mathematics is a science of numbers, logics, shapes, abstract structures and arrangements. It is learning of various Mathematical tools which are helpful in solving problems of sciences and technology. The Department of Mathematics is one of the oldest and most diverse department within the University. It was established during Pre-Partition days. Dr. Maria Hussain is presently working as Head of the Department. Mathematics, as a subject in B.Sc., was introduced in 1958. M.Sc. classes were initiated in 1996. Currently, department is offering 4-years BS program, 2-years Masters and Ph.D. in mathematics. Graduates of the University are expected to apply their skills to solve multifaceted problems in an ever-changing world and mathematics plays a vital part in cultivating the skills and framework needed to tackle such challenges. It is also one of the best supporting subjects for many other disciplines. Graduates from the department take up positions in diverse fields like teaching, research, banking, industry and planning etc. If you are a potential undergraduate student, we invite you to join us in exploring the exciting opportunities.

Vision

- To produce graduates who acquire certain knowledge in Mathematics to fulfill the objectives.
- To assist the students in their application of their knowledge to their work
- To train the students in a way that they could prepare themselves to pursue higher studies in pure or Applied Mathematics.

Learning Objectives

- It is desired to produce a pool of students equipped with the tools and strategies necessary to provide solutions to the mathematical problems. The graduates must be capable of contributing to industrial, managerial and educational fields through their innovative approach.
- Students will be capable of problems identification and finding their optimal solution.
- To develop a cultural of innovative research.

Outcomes

- Qualified graduates can serve the nation as teachers, researchers, bankers as well as entrepreneurs.
- The graduates can contribute as full time researchers in different research organizations.

BS PROGRAM

Eligibility Criteria

- Female candidates having Intermediate (HSSC) / 'A' Level / Equivalent exams with at least 50% marks in elective Mathematics of 200 marks are eligible to apply for BS Program.

Duration: 4 Years

Total Credit Hours: 135 CH

MS PROGRAM

Eligibility Criteria

- 16 Years of education in BS Mathematics /MSc Mathematics.
- The candidate must have obtained 2.5/4.00 CGPA in semester or 50% marks in annual system.
- Entry Test (50% qualifying Marks) and interview organized by University in mandatory for admission
- Candidates working in Government/semi-government institutions have to submit NOC from concerned organization.
- All other requirement as per University policy (Please see University criteria for MS)



DEGREE PROGRAMS OFFERED

- BS Mathematics (Regular/ self-supporting)
- MS Mathematics
- PhD Mathematics

FACULTY OF SCIENCE & TECHNOLOGY

Duration: 2 Years

Total Credit Hours: 36 CH

Ph.D. PROGRAM

Eligibility Criteria

- 18 years of education i.e. MS/ M.Phil. Mathematics
- The candidate must have 3.00/4.00 CGPA in semester or first division in Annual system.
- Entry Test (70% qualifying Marks) and interview organized by University in mandatory for admission to Ph.D. Program.
- All other requirement as per University Policy (Please See University admission Eligibility Criteria for Ph.D.)
- Admission in Ph.D. program will be carried out twice a year, Spring and Fall depending on the availability of seats.

Duration: 3-5 Years

Total Credit Hours: 18 CH

List of Faculty:

- Dr. Maria Hussain, Chairperson/ Associate Prof., Ph.D.
- Dr. Salma Kanwal, Associate Prof. (TTS), Ph.D.
- Dr. Uzma Bashir, Assistant Prof., Ph.D.
- Dr. Mrs. Shazia Javed, Assistant Prof., Ph.D.
- Miss Shamsa Ishaq, Assistant Prof, M.Phil.
- Dr. Rehana Ashraf, Assistant Prof., Ph.D.
- Dr. Tahira Sumbal Shaikh, Assistant Prof., Ph.D.
- Dr. Saima Nazeer, Assistant Prof., Ph.D.
- Dr. Sehrish Iftikhar, Assistant Prof., Ph.D.
- Dr. Kanwal Nazir, Assistant Prof., Ph.D.
- Dr. Sara Shafiq, Assistant Prof., Ph.D.
- Dr. Rabia Safdar, Assistant Prof. (TTS), Ph.D.
- Dr. Tayba Arooj, Assistant Prof., Ph.D.
- Ms. Atifa Asghar, Lecturer, M.Phil.
- Ms. Neelam Bashir, Lecturer, M.Phil.
- Ms. Asma Rafique, Lecturer, M.Phil.
- Ms. Hina Ali, Lecturer, M.Phil.
- Mrs. Naila Sajid, Lecturer, M.Phil.
- Dr. Sidra Saleem, Lecturer, Ph.D.
- Mrs. Sana Zahra, Lecturer, M.Phil.

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DEPARTMENT OF PHYSICS

OVERVIEW

Physics is an existing intellectual adventure that inspires young people and expands the frontiers of our knowledge about nature. It generates fundamental knowledge needed for future technological advances that will continue to drive the economic engines of the world. It contributes to the technological infrastructure and provides trained personnel needed to take advantage of scientific advances and discoveries. Physics is an important element in the education of chemists, engineers and computer scientists, as well as practitioners of the other physical and biomedical sciences. Physics extends and enhances our understanding of other disciplines, such as the earth, agricultural, chemical, biological, environmental science, astrophysics and cosmology subjects of substantial importance to all people of the world. It also improves our quality of life by providing the basic understanding necessary for developing new instrumentation and techniques for medical applications, such as CT scan, magnetic resonance imaging, positron emission tomography, ultrasonic imaging and laser surgery, nanomedicine and drug delivery system.

The department of Physics was established in 1951. Mrs. Hajra Khan was the first head while Mrs. Munawar Mansoor, Miss Naeema Mohsin, Mrs. Qaisra Shiraz Khan, Prof. Mrs. Yasmeen Ali and Prof. Dr. Rehana Zia were the other former heads of Physics department. Presently Prof. Dr. Zohra Nazir Kayani is the head of Physics Department. B.Sc classes were started in 1958 and later B.Sc (Hons) classes were conducted in the 1960's. M.Sc program was started in 1966. Ph.D program has been successfully launched in 2003. Currently Department enroll students for 4 year BS (Physics) program, 2 year MS (Physics) and Ph.D. program. Recently Physics department started 4 year BS Self Support Program (2021-25). Physics department is going to initiate MS Nanoscience & Nanotechnology (Regular) and MS Physics (Self Support Program) in Fall 2022.

Vision & Mission

During education in graduate and post graduate level the focus of the study will be on following disciplines:

- Train human resources particularly young women in advanced and challenging field of physics.
- Develop skills which are job oriented.
- Produce skills which can help in solving the scientific challenges and provide basics of design and construct various application in engineering and technology.
- Establish a forum for exchange of information on national and international level.

Learning Objectives

- To provide sound basic education in Physics for students planning careers in science, engineering and other disciplines.
- To encourage students to participate in research projects appropriate to their academic abilities and experience.
- To prepare and train students for advanced studies and specialization in recently emerging technologies.



DEGREE PROGRAMS OFFERED:

- BS Physics (Regular/ self-supporting)
- MS Physics
- MS Nanoscience and Nanotechnology
- PhD Physics

FACULTY OF SCIENCE & TECHNOLOGY

- To encourage creativity analytical thinking, critical analysis and innovative problem-solving skills.
- To develop a scientific attitude and demonstrate professional skills in teaching and research.
- To provide opportunity for considerable personal development.

Outcomes

- Students have the ability to do small independent project and work independently with multi disciplinary team.
- Students with advanced capabilities in leadership and management can provide significant intellectual contributions in the fields of Physics.
- Students can use the techniques, skills and modern scientific tools necessary for professional practice.
- Students can apply knowledge of Physics and other specialties in everyday of life.
- Students can conduct empirical research and think analytically.

BS PROGRAM (4-Year Degree Program)

Eligibility Criteria:

- Female candidates having Intermediate (HSSC) / 'A' Level / Equivalent to F.Sc. Pre-medical, F.Sc. Pre Engineering, ICS (Maths, Physics) with at least 50% marks are eligible to apply for BS Program . Students with intermediate Premedical have to do an additional non-credit hours Mathematics course.
- A-Level and equivalent with good grades in Pre-Engineering & Pre-Medical subjects.
- All other requirements as per university policy (please see university admission criteria for BS).

Duration: 4 Years **Total Credit hours:** 136 CH

MS PROGRAM (2-Year Degree Program)

• MS Physics

Eligibility Criteria

- Minimum 16 years of education BS/MSc Degree in Physics or equivalent
- The candidate must have obtained 2.5/4.00 CGPA in semester or 50% marks in annual system.
- Entry Test (50% qualifying Marks) and interview organized by University in mandatory for admission
- Candidates working in Government/semi-government institutions have to submit NOC from concerned organization.
- All other requirement as per University policy (Please see University criteria for MS)

Duration: 2 Years **Total Credit hours:** 36 CH

MS Nanoscience and Nanotechnology

Eligibility Criteria

- Minimum 16 years of education BS/MSc Degree in Physics or equivalent
- All other requirement as per University policy (Please see University Admission eligibility The candidate must have obtained 2.5/4.00 CGPA in semester or 50% marks in annual system.
- Entry Test (50% qualifying Marks) and interview organized by University in mandatory for admission
- Candidates working in Government/semi-government institutions have to submit NOC from concerned organization.
- All other requirement as per University policy (Please see University criteria for MS)

Duration: 2 Years, **Total Credit hours:** 36 CH

Ph.D. PROGRAM

Eligibility Criteria

- Minimum 18 years of education M.Phil/ MS in Physics or equivalent is required in the relevant field.
- The candidate must have 3.00/4.00 CGPA in semester or first division in Annual system.
- Entry Test (70% qualifying Marks) and interview organized by University in mandatory for admission to Ph.D. Program.
- All other requirement as per University Policy (Please See University admission Eligibility Criteria for Ph.D.)
- Admission in Ph.D. program will be carried out twice a year, Spring and Fall depending on the availability of seats.

FACULTY OF SCIENCE & TECHNOLOGY

Duration: 3-5 Years

Total Credit hours: 18 CH

List of Faculty:

- Prof. Dr. Zohra Nazir Kayani, Chairperson, Professor, M.Sc., Ph.D. (PU)
- Prof. Dr. Safia Iftikhar, Professor, M.Sc. (LCWU), M.Phil (QAU), Ph.D. (UET)
- Dr. Zeba Israr (TTS), Tenured Associate Prof., M.Sc, M.Phil Ph.D. (GCU)
- Dr. Alliya Qamar, Assistant Prof., M.Sc, M.Phil (PU), Ph.D. (LCWU)
- Dr. Aneeqa Sabah (TTS), Assistant Prof., M.Sc, M.Phil (PU), Ph.D. (Thiland)
- Dr. Shafaq Arif, Assistant Prof. M.Sc, (GCU), M.Phil (UET), Ph.D. (LCWU)
- Dr. Talat Saeed, Assistant Prof. Adhoc, M.Sc. (GCU), M.Phil(UET), Ph.D. (LCWU)
- Mrs. Afshan Rashid, Lecturer, M.Sc. (PU), MS (LCWU)
- Dr. Hina Irfan, Lecturer , M.Sc. (PU), MS, Ph.D. (LCWU)
- Mrs. Rabia Khurram, Lecturer (On Study Leave), M.Sc. (PU), MS (LCWU)
- Dr. Saima Khalid, Lecturer, M.Sc. (GCU), M.Phil (UET), Ph.D. (LCWU)
- Dr. Salma Waseem, Assistant Prof. Adhoc., M.Sc, M.Phil (PU), Ph.D. (LCWU)
- Dr. Madeeha Riaz, Assistant Prof. Adhoc., M.S, Ph. D (LCWU)
- Ms. Saba Tahniat, Lecturer, BS (LCWU), MS. (GCU)
- Dr. Farah Anjum, Teaching Assistant, M.Phil (GCU Fsd), Ph.D. (UAF)

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DEPARTMENT OF ZOOLOGY

OVERVIEW

Zoology department was established in 1956. Prof. Dr. Farkhanda Manzoor is the present Head of the Department. Currently Zoology department enroll students for 4 years Bachelors degree (BS Zoology) and 2 years MS degree (MS Zoology) and Doctoral degree program (Ph.D. Zoology). A number of original research papers from the faculty and students have been published in refereed journals. Research projects from HEC and other funding agencies have been won by the faculty members and are successfully accomplishing. A Bi-annual journal entitled Journal of Innovative Sciences' is also published under the Society for Promotion of Science and Technology, Zoology Department, LCWU. The Journal has been awarded 'Y' category by Higher Education Commission of Pakistan. Department of Zoology, LCWU is the first Women University winning HEC funded TDF grant in Aquaculture. Well established Animal House, Aquaculture Facilities and specialized Labs having modern equipments are key features of the Department. The Department has been successfully organizing "International Conferences on New Trends in Natural Sciences" for the last three years.

LEARNING OBJECTIVES

- To impart knowledge about animal sciences through wide range of subjects related to Natural Sciences.
- To teach different methods of exploration, investigation, organization of data and its utilization in practical life with reference to animal biology.
- To prepare and train students for advanced studies and specialization in recently emerging technological and interdisciplinary fields such as Biodiversity, Wildlife and Conservation, Molecular Biology, Entomology, Parasitology, Aquaculture, Genetics, Physiology and Endocrinology.

OUTCOMES

After the completion of the degrees students will be able to have:

- Skill in asking relevant critical questions regarding animals and their ecological associations as well as finding, comprehending and summarizing relevant information on zoological topics.
- Prepare successfully to compete in job placement.
- Understand broadly how to use various instrumental techniques effectively and will be capable enough to provide mediatory steps for the specific areas of concerns.

BS PROGRAM

Eligibility CRITERIA:

- Female candidates having Intermediate (HSSC) / 'A' Level / Equivalent to F.Sc. Pre-Medical with at least 50% marks are eligible to apply for BS Program .
- All other requirement as per university policy (please see university admission criteria for BS)

Duration: 4 years

Total credit hours: 136 CH



DEGREE PROGRAMS OFFERED

- BS Zoology (Regular/ self-supporting)
- MS Zoology (Regular/ self-supporting)
- PhD Zoology

FACULTY OF SCIENCE & TECHNOLOGY

MS PROGRAM

Eligibility CRITERIA

- 16 years of education having BS/M.Sc. degree in Zoology / Equivalent as per HEC criteria.
 - The candidates must have obtained 2.5/4.00 CGPA in semester or 50% marks in annual system.
 - Entry test (50% qualifying marks) and qualifying interview organized by University is mandatory for admission.
 - All other requirements as per University policy (please see university admission criteria for MS)
- Duration: 2 years Total credit hours: 36 CH

Specializations Offered*

- | | |
|------------------------------------|--|
| • Entomology and Vector Biology | • Environmental Biology |
| • Fisheries & Aquaculture | • Molecular Biology, Microbiology and Genetics |
| • Pathophysiology and Parasitology | • Physiology and Endocrinology |
| • Immunology and Toxicology | |

* Specialization will be offered according to specialization requested by the student and availability of the faculty.

Ph.D. PROGRAM

Eligibility CRITERIA

- 18 years of education. MS/M.Phil in Zoology/ Equivalent
 - The candidates must have obtained 3.00/4.00 CGPA in semester or first division in annual system.
 - Entry test (70% qualifying marks) and qualifying interview organized by University is mandatory for admission to Ph.D. program.
 - Candidates working in Government/ semi-government institutions must have to submit NOC from concerned organization.
 - All other requirement as per University policy (please see university admission criteria for Ph.D.).
 - Admission in Ph.D. program will be carried out twice a year, Spring and Fall depending on the availability of the seats.
- Duration: 3-5 years Total credit hours: 18CH (Course Work)+ Thesis

SPECIALIZATIONS OFFERED*

- | | |
|------------------------------------|--|
| • Entomology & Vector Biology | • Environmental Biology/ Biodiversity |
| • Fisheries & Aquaculture | • Molecular Biology, Microbiology and Genetics |
| • Pathophysiology and Parasitology | • Physiology and Endocrinology |
| • Immunology and Toxicology | |

* Specialization will be offered according to specialization requested by the student and availability of the faculty.

List of Faculty:

- **Prof. Dr. Farkhanda Manzoor**, (Chairperson of Department), Professor, M.Sc., Ph.D. (PU), M. Ed. (Sci. Edu), Postdoc. (USA), PGD in Environmental Law (PU)
- **Prof. Dr. Farzana Rashid**, Professor, M.Sc., M.Phil. (PU), Ph.D. (BUCT, China), M. Ed. (Sci. Edu.)
- **Dr. Saima Sharif**, Professor (TTS), M.Sc., Ph.D. (PU)
- **Dr. Asma Abdul Latif**, Associate Professor (TTS), M.Sc., Ph.D. (PU), B.Ed. (PU)
- **Dr. Shagufta Naz**, Associate Professor (TTS), M.Sc., M.Phil., Ph.D. (PU) B.Ed. (AIU)

FACULTY OF SCIENCE & TECHNOLOGY

- **Dr. Ghazala Jabeen**, Associate Professor (TTS), M.Sc., Ph.D. (UAF), B.Ed. (AIOU)
- **Dr. Shafaq Fatima**, Associate Professor (TTS), M.Sc. (UAF), M.Phil. (GCU), Ph.D. (Australia), M.Ed.
- **Dr. Zakia Kanwal**, Associate Professor (TTS), M.Sc. (UAF), Ph.D. (Netherlands)
- **Dr. Sumera Sajjad**, Assistant Professor, M.Sc., M.Phil., Ph.D. (QAU)
- **Dr. Fakhar-Un-Nisa**, Assistant Professor (TTS) M.Sc., Ph.D. (PU), Post doc. (China), (On Postdoc study leave)
- **Dr. Najiya al-Arifa**, Assistant Professor, MPhil., Ph.D. (GCU)
- **Dr. Saffora Riaz**, Assistant Professor, MS, Ph.D. (LCWU)
- **Dr. Mateen Arshad**, Assistant Professor, MS, Ph.D. (LCWU), B.Ed.(AIOU)
- **Dr. Mahnoor Pervez**, Assistant Professor, MS, Ph.D. (LCWU)
- **Ms. Ayesha Tahir**, Lecturer, MS, (LCWU) (On Ex-Pakistan Study Leave)

Technical Staff

- **Mr. Babar Amjad Khan**, Computer Lan Technician
- **Mr. Naveed Ahmad**, Lecturer Assistant
- **Mr. Taswar Hussain**, Lecturer Assistant (Intermediate College)
- **Mr. Tariq Akhlaq**, Lecturer Assistant
- **Iram Waqar**, Lecturer Assistant

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