PROSPECTUS



DEPARTMENT OF BOTAI



DEPARTMENT OF BOTANY University of The Punjab



"....Using Knowledge Of Plant Sciences For Betterment Of Humanity And Earth."



The Scientific Study of Plants, Lungs of the Planet Earth



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DEPARTMENT OF BOTANY (OVERTURE)



Since its establishment in 1882 at Lahore, University of the Punjab has been the largest and the oldest seat of learning in Pakistan. Quaid-e-Azam Campus Lahore, is one of the campuses of this University. The Department offers various degree programs in Botany with the main focus on Plants Sciences and specializations in the areas of Molecular Biology, Genetics, Mycology, Microbiology, Plant Tissue Culture, Plant Biotechnology, Plant Ecology, Environmental Biotechnology, Environmental Biology, Phycology, Palynology, Anatomy and Taxonomy. The Department has a legacy of producing renowned Botanists having national and international repute. One of the notable features of the faculty members has been their research, in areas of Environmental Biotechnology, Molecular Genetics, Plant Tissue Culture, Mycology and Fungal Systematics, Genomics, Proteomics, Microbiology, Plant Ecology, Stress Physiology, Plant Biochemistry, Paleobotany and Palynology, Anatomy and Taxonomy. The Department has eleven research laboratories with an elaborate research program involving national and international collaborations with academia, industry and government organizations. Currently, many research projects are being run by the faculty members. The Department has facilities including Library, Computer laboratory, Ladies Room, Seed Center and Botanical Garden for field experiments, Greenhouses and Climatic rooms for research experiments.



HISTORY; DEPARTMENT OF BOTANY

The Department of Botany, University of the Punjab stretches back over three quarters of the century. It was established in 1924 in the building of Botany Department, Government College Lahore. Prof. Shir Ram Kashyap headed both the Departments of Botany of Government College and that of the University. Faculty members of Botany Departments of both Government College and University shared



teaching of Botany to M.Sc. and B.Sc. classes. Prof. Sher Ahmed Lodhi was the first Muslim HoD appointed in September 1947. The collaborative teaching continued till late in 1962.

The Department moved to the Quaid-e-Azam Campus in 1963 and was housed in various buildings until its present building was constructed in 1973. In the past four decades, the Department has developed a very elaborate program of teaching and research for BS, M.Sc., MPhil., MS and Ph.D. Degrees. Until the year 2000, the Department was running only two-year M.Sc. regular Degree Program in the Annual Examination System. The B.Sc. Honors (3 year) and M.Sc. Honors (2 year) Programs were launched in the year 2001 in semester system. The PhD Regular Program in Botany was also started in the Department in the year 2001. In the year 2005, B.Sc. (Hons) and M.Sc. (Hons) Program was converted to B.S. (4 year) and M.S. (2 year) Program respectively and M.Phil./M.S. Program was also started. Each year students in all courses are inducted in the fall semester commencing in September. In the year 2011, non-regular Ph.D. was also started in the Department. Starting from the year 2017, the Department is also offering admissions in Self-Supporting Programs of M.Sc., MS and M.Phil.



MISSION STATEMENT

The mission of the Department is to inculcate concept-based knowledge in the minds of its Graduates by delivering various subjects of Plant Sciences with a problem-solving approach through research, thereby creating new knowledge pertaining to latest issues of Plant Sciences. The goal of the Department is to produce top quality Graduates in Botany while grooming best-trained, problem-solving minds capable of playing a leading role in the society with refined human qualities and great integrity.

WHY TO CHOOSE BOTANY?

The future prospects of choosing Botany are highly multifarious. Whether at basic or applied level, the study of plants stands central amongst several disciplines. Knowing about plants is fundamental to keeping a sustainable biosphere, as well as, securing well-being of mankind on long term basis. Getting knowledge and doing research on plants' visual appearance, growth, evolution, breeding, utilization, and environmental interactions is highly important. Studying Botany can help one excel in the basic disciplines such as, Anatomy, Biochemistry, Biophysics, Bryology, Cytology, Ecology, Genetics, Lichenology, Molecular Biology, Microbiology, Morphology, Mycology, Paleobotany, Pteridology, Phycology, Physiology, Systematics, Systems Ecology and Taxonomy.



Botany graduates can excel in disciplines related to Applied Plant Sciences such as, Phytotechnologies, Agricultural Sciences, Agronomy, Biodiversity Conservation, Biotechnology, Breeding, Economic Botany, Environmental Sciences, Ethnobotany, Food Science and Technology, Forestry, Horticulture, Marine Botany, Natural Resource Management, Plant Pathology, Plant Entomology and Sustainable Ecosystem Services. The major employers of plant biologists are educational institutions, federal and state agencies, as well as industries. Job opportunities usually depend upon educational training and experience. New positions in Botany are expected to increase at an above-average rate through the turn of the century. Growing world population continues to increase the need for better food supplies. Environmental concerns, such as air, water and soil pollution, will create openings for Ecologists in government and industry. The search for new drugs and medicines and useful genes for improving crop plants will continue to create a need for botanical explorers.





MESSAGE FROM THE CHAIRPERSON



I welcome you to the Department of Botany, one of the pioneer institutes of Plant Sciences in the country. Plants form one of the most important domains in Biological Sciences. The importance of plants as producers in the global ecosystem cannot be denied. Botany today is not conventional. It is touching all applied levels starting from molecular, proteomics, genomics to greenhouse gas emissions, global warming, climate change and carbon footprint.

It gives me pleasure to state that my department is one of the best with respect to its faculty and is well known for its research productivity. Currently, the department imparts rigorous and quality-based programs in all areas of Plant Sciences. Presently, BS, MSc, MS, MPhil and PhD programs are being offered in Botany with a highly conducive learning orientation and practical training for professional excellence. I sincerely hope that your decision to join the Department of Botany will lead you to the height of academic excellence for a bright future.

Ph: 042-99231152

Email: chairperson.botany@pu.edu.pk

Facebook: Department of Botany, PU, Lahore. (BotanyPULahore)

Web Page: www.Botanypu.edu.pk

(Prof. Dr. Firdaus-e-Bareen) Chairperson

LIST OF FACULTY MEMBERS

1. Dr. Firdaus-e-Bareen Professor and Chairperson

Ph.D. (Pb.)

Environmental Biotechnology

2. Dr Syed Razi Abbas Shamsi Professor Emeritus

Ph.D. (London.)

Ecology, Environmental Biology, Air pollution

3. Dr. Javed Iqbal Professor Emeritus

Ph.D. (Pb.)

Molecular Plant Biotechnology

4. Dr. Muhammad Saleem Professor

Ph.D. (UK)

Molecular Genetics

5. Dr. Faheem Aftab Professor

Ph.D. (Pb.)

Plant Developmental and Regenerative Biology











6. Dr. Abdul Nasir Khalid Professor

Ph.D. (Pb.)

Fungal Biology and Systematics

7. Dr. Shakil Ahmed Associate Professor

Ph.D. (GCU.)

Plant Ecology/Environmental Biology/Biotechnology

8. Dr. Humera Afrasiab Assistant Professor

Ph.D. (Pb.)

Plant Biotechnology

Dr. Asad Shabbir

Assistant Professor

Ph.D. (Australia)

Ecology and Evolution

09.Dr. Farhat Rass asood Assistant Professor

Ph.D. (Pb.)

Sedimentary and Stratigraphical Palynology

10.Dr. Ambreen Ahmed Assistant Professor

Ph.D. (Pb.)

Microbiology and Molecular Genetics













11. Dr. Asma Zulfiqar Assistant Professor

Ph.D. (Pb.) Plant Functional Genomics

13. Dr. Atif KamranAssistant ProfessorPh.D. (Canada)

Plant Breeding and Quantitative Genetics

14. Dr. Abdul Rehman Khan Niazi Assistant Professor Ph.D. (Pb.) Biodiversity and Systematics

15. Dr. Syeda Aisha Nazir Assistant Professor

Ph.D. (Pb.) Applied Phytotechnologies for Environmental Sanitation

16. Dr. Muhammad Shafiq Assistant Professor

Ph.D. (Pb.) Sustainable Ecosystem Services

17. Dr. Zahoor Ahmad Sajid Assistant Professor Ph.D. (Pb.) *Plant Tissue Culture*













DEGREE PROGRAMS AND ELIGIBILITY CRITERIA

Department of Botany offers admissions to the following academic programs:

- 1. BS Botany (4 Years)
- M.Sc. Botany (2 Years) Morning & Self-Supporting
- MS Botany (2 Years) Morning & Self-Supporting
- MPhil Botany (2 Years) Morning & Self-Supporting
- 5. Ph.D. Botany Regular & In-Service Program

BS (4 YEARS) PROGRAM (SEMESTER SYSTEM)

Eligibility Criteria and Admission Criteria:

F.Sc. (Pre Medical) or equivalent examination. As per university admission policy

Age Limit: Candidates with age not more than 24 years on the closing date of submission of admission form are eligible for admission in BS program.

Merit Formula: Academic	Record	100%
A = <u>Marks earned (1/4 of Ma</u>	atriculation + F.Sc. or equivalent + Additional	marks*)
Total marks (1	L/4 of matriculation + F.Sc. or equivalent)	
*Additional Marks: Hafiz Q	luran	20 Marks

Seats :

	Total	Open Merit	Reserved
Regular: 29	50	42	08
SCHEME OF STUDY FOR BS IN B	OTANY		
Semester-I			
Major Courses:			
Plant Diversity			3 +1
Inorganic Chemistry 3 +1			3 +1
Invertebrate Diversity 3+1			3 +1
English			2
Islamic Studies			2
Basic Computer			2
SEMESTER-II			
Major Courses			
Plant Systematics, Anatom	y and De	velopment	3+1
Minor Courses	-	-	



Organic Chemistry	3+1			
Chordates Diversity	3+1			
Compulsory Courses				
Mathematics	2			
English	2			
Pakistan Studies	2			
Semester-III				
Major Courses				
Cell Biology, Genetics and Evolution	3+1			
Minor Courses				
Physical Chemistry	3+1			
Biochemistry	3+1			
Compulsory Courses				
Mathematics	2			
English	2			
Elective Courses				
Any language course recommended by University	2			
SEMESTER-IV				
Major Courses				
Plant Physiology and Ecology	3+1			
Minor Courses				
General Chemistry	3+1			
Physiology	3+1			
Compulsory Courses				
Mathematics	2			
English	2			
Elective Course				
Any course, other than parent faculty	2			
SEMESTER-V				
Higher Fungi	3+1			
Microbial and Molecular Genetics	3+1			
Evolutionary Trends in Trachaeophytes	3+1			
Environmental Biology	3+1			
Semester-VI				
Seminar	1			
Plant Anatomy (Advance Course)	3+1			
Gene Cloning (Advance Course)	3+1			
Plant Tissue Culture (Advance course)	3+1			
Palynology (Advance course)	3+1			
Laboratory Techniques	1			
Semester-VII				
Research / Dissertation / Special Paper		03 Credit Hours	٦	
Selected Papers from Serial No. Bot-401 to Bot- 430		03 Credit Hours	}	6 credit hours
SEMESTER-VIII			J	
Research / Dissertation / Special Paper		03 Credit Hours	٦	
Selected Papers from Serial No. Bot-431 to Bot- 468		03 Credit Hours	}	6 credit hours
			J	

M.Sc. (2 YEARS) PROGRAM (REGULAR & SELF SUPPORTING)

Eligibility Criteria:

B.Sc. / equivalent

Age Limit: Candidates with age not more than 26 years on the closing date of submission of admission form are eligible for admission in M.Sc. (Morning) program. There is no age limit for self-supporting program.

Admission Criteria:

As per university admission policy

Merit Formula:

Academic Record

100%

A = Marks earned (1/4 of Matriculation + 1/5 of F.Sc. or
equivalent + B.Sc.+ Additional marks*)

Total marks (1/4 of matriculation + 1/5 of F.Sc. or equivalent + B.Sc.)

*Additional Marks:

	Total	Open Merit	Reserved
Seats Available:			
Agriculture/Biochemist	ry		10 Marks
Geography/Psychology/	Applied Psychology/Cor	mputer/	
Combination of Botany,	Zoology and any of the	following subjects: -	
Statistics/Geography/G	eology/Computer		10 Marks
Combination of Botany,	Chemistry with any of t	he following subjects: -	
Combination of Botany,	Zoology and Chemistry		20 Marks
Hafiz Quran			20 Marks
Additional Marks:			

37

50

45

Replica (self-Supporting)	50

SCHEME OF STUDY FOR MSC IN BOTANY

Regular

SEMESTER-I

Bacteriology and Virology	2+1
Lower Fungi	2+1
Evolutionary Biology of Vascular Cryptogams	2+1
Cell and Molecular Biology	2+1
Plant Bio-Chemistry-I (Structure & Catalysis)	2+1
Autecology	2+1
Semester-II	
Phycology and Bryology	2+1
Higher Fungi	2+1
Evolutionary Biology of Spermophytes	2+1
Anatomy of Vascular Plants	2+1
Plant Bio-chemistry-II (Bioenergetic and Metabolism)	2+1
Synecology and Ecosystem	2+1
Semester-III	
Plant Taxonomy	2+1
Biostatistics	2
Genetics-I	2+1
Plant Physiology-I	2+1



08

04

Conservation Biology	2
Research Methodology / Term Paper	1
Seminar	1
Special Paper / Research	2+1
Lab Techniques	1
Semester-IV	
Genetics-II	2+1
Plant Physiology-II	2+1
Environmental Biology	2+1
Term Paper	1
(Special Paper-I & Special Paper-II) or Research	(2+1 & 2+1) or 0+6

M.PHIL. BOTANY (REGULAR & SELF SUPPORTING)

Eligibility Criteria: M.Sc. Botany Admission Criteria: As per university admission policy Seats Available: Regular 15 Self Supporting 30

Course work: 1 Year (2 Semester = 24 Credit hours) Research Work: 1 Year



MS BOTANY (REGULAR & SELF SUPPORTING)

Eligibility Criteria: BS Botany (Four years' program) Admission Criteria: As per university admission policy Seats Available: Regular 15 Self-Supporting 30 Course work: 1 Year (2 Semester = 24 Credit hours) Research Work: 1 Year

PH.D. BOTANY (REGULAR & IN SERVICE PROGRAM)

Eligibility Criteria: MS/M.Phil Botany /or related equivalent disciplines Admission Criteria: As per university admission policy Seats Available: Regular 20

In service 20





Course work: 2 Semester(18 Credit hours)Research Work: 2-4 Years(06 Credit hours)Comprehensive:(01 Credit hour)

FIELDS OF SPECIALIZATIONS FOR RESEARCH WORK

Environmental BiotechnologyMolecular Genetics	Microbiology and Microbial Genetics Plant Functional Genomics
Plant Developmental and Regenerative Biology	Sedimentary and Stratigraphical Palynology
Fungal Biology and Systematics	Plant Breeding and Quantitative Genetics
Ecology and Environmental Biology	 Biodiversity and Systematics
Plant Biotechnology and Tissue Culture	Ecology of Invasive Species

Environmental Biotechnology

This research laboratory deals with research for the mitigation and abatement of pollution in soil, air and water. Prof. Dr. Firdaus-e-Bareen is the group leader having PhD, MS/MPhil, MSc and BS research students. Dr Aisha Nazir leads the Section of Applied Phytotechnologies for Environmental Sanitation in Environmental Biotechnology Laboratory. Dr Muhammad Shafiq work in Sustainable Ecosystem Services domain of Environmental Biotechnology Laboratory. It has all facilities related to research in the field of Environmental Biotechnology. Current areas of research include:

- Phytotechnologies for Pollution Abatement
- Wastewater treatment technologies for removal of heavy metals and POPs
- Management of agricultural waste through composting
- Management of noxious weeds through biochar formation
- Biodiversity and Ecology of Aquatic Hyphomycetes
- Plant and Microbe based Biofertilizers and Biopesticides



Molecular Genetics

Molecular Genetics Research Laboratory is supervised by Prof. Dr. Muhammad Saleem. In this lab the main focus is on Molecular Genetics. The following are the major areas of Research.

- Nucleic Acids Characterization for Molecular Analysis
- Posttranslational Modification Studies
- Molecular Characterization of Industrially Important Enzymes
- Exploring Genetic Diversity Through Advanced Molecular Tools



Dr. Muhammad Saleem is supervising research in the area of Molecular Genetics. He did his PhD from Imperial College London and he had postdoc experience and DIC done from Sir Alexander Fleming Building Imperial College London. During his stay at Imperial College London he also taught London University's undergraduate classes for five years. At present he is doing his research in the area of Plant Molecular Biodiversity (molecular gene conversion and mutation) and its possible role in the processes of evolution-and species extinction. The system he did work on during his PhD and postdoc is Sordaria-Ascobolus.

He has been a Member for various prestigious Universities bodies and statutory organs such as University Senate, Selection Board, Academic Council, Affiliation Committee, Boards of Faculties and Board of Studies etc. He is also a member of various Known International Societies such as American Genetics Society, German Genetics Society, European Fungal Genetics Associations and a Member of Royal College of Science Association, UK.

Plant Developmental and Regenerative Biology (PDRB)

PDRB Research Lab headed by Prof. Dr. Faheem Aftab mainly uses in vitro approaches to solve mysteries of plant development and regenerative biology. Using tissue culture means it focuses on plant protoplasts, cell, tissue, organ and callus cultures including studies on micropropagation, somatic embryogenesis and regeneration in plants of economic significance. Woody plant propagation using combination of in vitro and newly-emerging propagation approaches in the lab, greenhouse and field is another focus of this lab. Other emerging directions of research in this lab involve stress biology and collaborative work on molecular screening of disease-resistance genes, transformation, and use of growth promoting bacteria in crop improvement. Finding out still newer ways and means to improve crop productivity is one of the main aims of this research lab.



Fungal Biology and Systematics

This Lab is headed by Prof. Dr. Abdul Nasir Khalid and Dr Abdul Rehman Khan Niazi. This research laboratory deals with the taxonomic identification of Fungi including macrofungi, Pathogenic fungi and Lichens on morpho-anatomical and phylogenetic bases. The ectomycorrhizal community structures and all aspects of cultivating fungi including their authentic identifications, biochemical analyses derived from cultures of edible mushrooms are also dealt with. It has all facilities related to research in the field of Fungal Systematics and Biotechnology. Current areas of research include:

- Taxonomy of mushrooms
- Ectomycorrhizal community structure analysis
- Plant pathology
- Biochemical/mineral analyses of mushrooms
- Culturing, spawn preparation and cultivation of mushrooms
- Lichenology

This lab was established in 2005. Uptil now, sixteen students have completed their PhD from this lab and twelve are currently enrolled. A number of MS/M.Phil, M.Sc. and BS students are also working in this lab. More than 200 articles have been published in National and International journals, so far. A number of research articles have been presented in National and International conferences.





Applied Environmental Biology Research Lab.

The applied environmental biology research lab headed by Dr Shakil Ahmed provides the students with research experiences that will poise them to become scientific leaders that address our most pressing environmental problems. This research group is working on natural principles of plant responses to environmental stresses with keen interest of air, water and soil pollution, aerosols, bio-aerosols, heavy metals, microbial activities, nano particles, and enzyme production through biological agents.

We are focused on the application of modern techniques and knowledge to understand, monitor and assess the current environmental issues and problems. Our Primary objective is to improve experimental protocols to give new sustainable management strategies for innovation, environmental stability and betterment of society.

Present Research Activities

- Environmental Pollution/ Plant Ecology/ Stress Biology: Plant responses to various environmental stresses
- Heavy Metals /Particulate Matters/ Aerosols & Bio-aerosols Biology: Its Production and Impact measurements on roadside, vegetation and environment.
- Myco-Technology/Mushroom Biotechnology---Production & Purification of Macro-Molecule Like enzymes, Polysaccharides (Exeo/Endo) etc
- Green synthesis of Nano-Particals: Green synthesis and Characterization of Metallic Nano-Particals and their applications



Microbiology and Microbial Genetics

The research work of this laboratory is under the supervision of Dr. Farkhanda Jabeen. The research group includes PhD, MS/MPhil, MSc and BS research students. The Lab is equipped with the instruments related to microbiological and molecular biological work. Current areas of research include:

- 1. Biodegradation of pesticides by using indigenous bacteria
- 2. Antibacterial analysis of different medicinal plants extract
- 3. Interaction of heavy metal resistant bacteria and Plants
- 4. Analysis of medicinal plants extract



Micropalaeontology / Palaeopalynology Research Laboratory

The laboratory is well equipped with the latest research equipment confirming to the International Standards. It has provided basic and advanced facilities for investigation not only to the students but to the professional and amateur scientists from Pakistan but to the foreign scientists and pupils from other prominent research organizations and Universities of the world since past few decades. The research involves processing of sedimentary rock samples of various ages through maceration to isolate palynomorphs. Based on most latest analytical methods, the palynological data is revolved to reconstruct Changing Vegetation & Climate and Environment of Deposition. Beside these studies Biocorrelation, Palynostratigraphy and Age estimation of rocks is carried out. All such parameters help in improving our understanding pertaining to the ever-changing Plant Communities and Terrestrial Ecosystems against the changing environment through time and space.



Microbiology and Microbial Genetics

This Research Lab is headed by Dr. Ambreen Ahmed. Our laboratory introduces the students to the microbial world where they understand the contemporary themes of Microbiology with special emphasis on plant-microbe interaction studies. Several research projects are going on in our laboratory including the studies regarding plant growth promotional potential of indigenous PGPR and their molecular aspects, enzymology, physiology and genetics of PGPR, plant-bacterial partnership, nanotechnology and nanoparticle studies, bioremediation potential of bacteria, antimicrobial activity of bacteria, etc. The research mainly focuses on the beneficial utilization of indigenous bacteria for environmental inputs and plant growth improvement. We emphasize on using the tools of molecular genetics, biochemistry and microbiology in our research work.



Molecular plant physiology/Plant Functional Genomics

This Lab is being supervised by Asma Zulfiqar who has conducted pioneering Research on the metabolism of chromium detoxification in Plants using a combination of genomics, plant molecular biology and physiology approaches. Her research activities include plant genomics, Cellular, molecular biology and plant biotechnology. She is currently focusing on

- In elucidating the molecular mechanisms underlying heavy metal tolerance in Arabidopsis and Brassica juncea spp.
- Aiming to discover Zn homeostasis mechanism in rice/wheat with particular emphasis on transport proteins.
- Exploring the mechanism of boron deficiency in spikelet sterility of rice



EVALUATION AND GRADING SYSTEM

1. In the courses taught, there will be at least one home assignment/quizzes and two tests (midterm and final examination) in each course with the weightage as under: -

Α.	Assignments	25%
В.	Mid Term	35%
C.	Final Term	40%

- 2. To pass a course, student must obtain at least '**D**' grade (50% marks) separately in assignment, Midterm exams and Final examination. In case of MS / M. Phil to pass a course, student must obtain "**C**" grade (60% marks) separately in assignment Mid Term and Final Term examination.
- 3. A Candidate with less than 75% of the attendance in lectures and practical separately shall be dropped from the course.
- 4. A student must have attended at least 75% of the classes held in a course in order to be allowed to sit in the final examination.

RULES FOR PROMOTION IN BS and MSc SEMESTER SYSTEM

- 1. At the end of each semester, a student must obtain a minimum Grade Point Average (GPA) of **2.00** to be promoted to next semester.
- 2. In case a student is able to obtain GPA of 1.70 or more but less than 2.00, he/she will be promoted to the next semester on probation. The candidate who fails to secure 1.50 GPA in the 1st semester or 1.70 CGPA in the subsequent semester/s shall stand automatically dropped from the rolls.
- 3. At the end of each semester, a student must obtain a minimum Cumulative Grade Point Average (CGPA) of 2.00 for promotion to the next semester.
- 4. A student has to obtain CGPA 2.00 in the last semester of each program for the award of degree.
- 5. In the third, fifth, seventh, ninth semester a student will be required to repeat those courses of the first, third, fifth and/or seventh semesters in which he/she had failed.
- 6. In the fourth, sixth, eighth and tenth semester, a student will be required to repeat those courses of second, fourth, sixth and/or eighth semester in which he/she had failed.
- 7. In case a student repeats the course(s) for the improvement of grade(s) which he/she has already taken, the better of the two grades of the course(s) will be counted for CGPA calculations.

GRADING SYSTEM

1. Equivalence in numerical grades, letter grades and points will be as follows: -

Present Marks	Letter Grade	Grade Point
85 & above	А	4.00
80 - 84	A-	3.70
75 – 79	B+	3.30
70 – 74	В	3.00
65 – 69	В-	2.70
61 – 64	C+	2.30
58 – 60	С	2.00
55 – 57	C-	1.70
50 – 54	D	1.00
Below 50	F	0.00
Withdrawal	W	
Incomplete	I. I.	

2. Maximum possible Grade Point Average is 4.00

Minimum Cumulative Grade Point Average for obtaining 4 years Bachelors and 2 years MA/M.Sc. degree is 2.00

RULES FOR PROMOTION IN MS/MPhil and PhD

- 1. Maximum possible Grade Point Average is 4.00.
- 2. Minimum Cumulative Grade Point Average for obtaining 2 year MS/M.Phil (course work and comprehensive) is 2.50. In order to qualify in the examination of semester a student must obtain at least GPA 2.50 and in individual subject not less than 2.30.
- 3. If GPA/ CGPA of a student remains <2.50 (but >2.30) the student shall be given one chance (only once) to repeat two subjects (2-6 Credit Hours) in order to improve CGPA in MS/M.Phil. If GPA /CGPA of a student remain <2.50 he/ she shall be dropped from studies
- 4. Minimum Cumulative Grade Point Average for PhD (course work and comprehensive) is 3.00

GRADING SYSTEM

Present Marks	Letter Grade	Grade Point
85 & Above	А	4.00
80 - 84	A-	3.70
75 – 79	B+	3.30
70 – 74	В	3.00
65 – 69	В-	2.70
61 - 64	C+	2.30
58 – 60	С	2.00
55 – 57	C-	1.70
50 – 54	D	1.00
Below 50	F	0.00

A fraction of mark in a course is to be counted as '1' mark e.g. 64.1 or 64.9 is to be shown as 65.

FACILITIES AT THE DEPARTMENT OF BOTANY

1. Library

There is a large collection of books in the departmental library comprising of more than 10,784 books covering all areas of Plant Sciences, it has a seating capacity of about 70 students. Research Journals, Dictionaries, Encyclopedias, Newspapers and Books of general interest are also available.

ii. **Computer Laboratory**

A computer laboratory equipped with 40 computers is available to all classes for assignment preparation and literature search.

iii. Ladies Room

A ladies' room is available separately for prayer and relaxation.

Lecture Hall/Auditorium iv.

One lecture/ seminar hall is available in the department with a seating capacity of 200. The hall is well equipped with multimedia and overhead systems.

Student Transport v.

The university has its own well-established

transport system for students/staff and faculty for daily picks and drops. The Transport Department also provides vehicles for study and excursion tours. A shuttle service is also there for intra-university transportation.

vi. Medical Facilities for Faculty and Students

The Health Centre in the campus provides emergency, OPD and six bed hospital faculties. Services for general medical care and ENT, eve, dental, pathological examination and radiology labs are available.

Academic Counseling vii.

Guidance is available to the students from teachers beyond teaching classes. There is a Career and Counseling Centre in the University to help out the students.

Faculty members make informal communication with students in tutorials and discuss matters related to studies and career designing. A student Advisor is there for consultation on academic and other matters. Moreover, each academic program has a faculty member as Coordinator for the guidance of student. All the faculty members also advise students during their research tenure.

viii. Students attendance record

Students' attendance record system is in practice and calculated/observed before the final term examination. Students with less than 80% attendance are not allowed to sit in examination as per University Semester Rules.







ix. Financial Support to Students

Number of scholarships available for students *i.e.* Punjab University Merit, Needy and Post Graduate Scholarships. Many other scholarships like HEC, PEEF, District, Province, and DPCC scholarships are being given which are also displayed on notice board from time to time. Split Ph.D., Indigenous Ph.D. and IRSIP scholarships are available for students and they get them if they qualify

x. Greenhouse, Experimental Area

There are experimental areas available for the field work of research students. There are four wire houses in the ground opposite to the Chairperson's office. There are five wire houses and about ten experimental areas in the Botanical Garden for student's research. Greenhouses of different dimensions have been constructed for experiments with plants in the Department, Seed Center and Botanical Garden. These are meant for in vivo treatment of plants and research experiments.



CURRICULAR AND CO-CURRICULAR ACTIVITIES



i. ANNUAL SPORTS

Annual sports are regularly arranged in the department to develop orientation for teamwork and sportsman spirit in the students. Prizes/certificates are awarded to the winners of various events and competitions.



FIELD STUDY TOURS

Field tours are arranged to natural vegetation sites like forests, wastelands, deserts and others like

model farms and ecologically significant sites to impart on-site knowledge and strengthen the theoretical concepts of students. Study tours are arranged at least once during the academic year. Collection and identification of Fungi, Algae, Bryophytes, Pteridophytes and Coniferous/Flowering plants is also done by the students.

ii. EVENTS

Different events are held throughout the year to engage students in curricular and co-curricular activities. Scientific Workshops, Seminars, Tree Plantation Campaigns and Competitions are



organized including debates, quizzes, essay writing etc. Annual dinner for students of all classes and programs is arranged once during the year.







For expanding the bank of Botanical knowledge at national and International level, the Department of Botany has successfully organized the first International conference on "Conventional and Modern Approaches in Plant Sciences" (CMAPS-17) in November 27-28, 2017. It was a multi-disciplinary and multinational gathering of Plant scientists from all over the world and across Pakistan.





PROMINENT ALUMNI

The alumni of Department of Botany are serving in many Academic and Research Institutions of Pakistan including public sector and private Universities, Colleges and Research Institutes. Within University of the Punjab, the Department of Microbiology and Molecular Genetics and Department of Mycology and Plant Pathology (currently, Institute of Agricultural Sciences) are offshoots of Botany Department. Following are some of the renowned graduates of Department of Botany who are serving in various organizations:

- 1. Prof. Dr. Khalid Hamid Sheikh Former Vice Chancellor, University of the Punjab, currently Professor Emeritus at GC University, Lahore.
- 2. Prof. Dr. Shahida Hasnain Former Vice Chancellor, Women University Multan and National Distinguished Professor HEC.
- 3. Prof. Dr. S.R.A Shamsi Professor Emeritus, Department of Botany, University of the Punjab
- 4. Prof. Dr. Javed Iqbal –Director, School of Biological Sciences and Professor Emeritus, Department of Botany, University of the Punjab, Lahore.
- 5. Prof. Dr. Habib Ahmad, Vice-Chancellor, Government Islamia College, Peshawar.
- 6. Prof. Dr. Shafiq-Ur-Rehman, Principal, SE College, Bahawalpur.
- 7. Prof. Dr. Manzoor Hussain, Dean/Chairman, Department of Botany, Hazara University, Mansehra.
- 8. Prof. Dr. Ikram Ul Haq Professor Emeritus/ Ex-Vice Chancellor, GC University, Lahore.
- 9. Prof. Dr. Farah Khan Chairperson, Department of Botany, LCWU Lahore.
- 10. Dr. Ghulam Murtaza Head of the Department, Department of Botany, AJK University, Muzaffarabad.
- 11. Prof. Dr. Shagufta Naz Chairperson, Department of Biotechnology, LCWU Lahore.
- 12. Prof. Dr. Anjum Nasim Sabri Chairperson, Department of Microbiology and Molecular Genetics, PU.
- 13. Prof. Dr. Samina Mehnaz Chairperson, Department of Biological Sciences, FC College University Lahore.

- 14. Prof. Dr. Ibrar Hussain Head of the Department of Botany, University of Education, Township Campus, Lahore.
- 15. Prof. Dr. Zahid Mukhtar Principal Scientific Officer, NIBGE, Faisalabad.
- 16. Prof. Dr. Abdul Wahid Head of the Department, Department of Environmental Sciences, BZU, Multan.
- 17. Prof. Dr. Muhammad Shafiq Ch, Chairman, Department of Life Sciences, The Islamia University, Bahawalpur.
- 18. Prof. Dr. Azra Yasmin. Dean of Life Sciences, F.J Women University, Rawalpindi

1. Ms. Rehana Kousar	Librarian
2. Muhammad Arshad	Admin Officer
3. Muhammad Ashraf	Store Superintendent
4. Maqsood Akhtar	Assistant
5. Habib ur Rehman	Assistant
6. Kashif Masood	Assistant
7. Allah Ditta	Sr. Clerk
8. Muhammad Rasheed	Sr. Clerk
9. Ms. Farhat Jabeen	Sr. K.P.O
10. Sajjad Hussain	Jr. Clerk
11. Ahsan Ullah	Jr. Clerk
12. Muhammad Imran Saleem	Jr. Clerk
13. Syed Qasim Ali	Lab Assistant
14. Saif ur Rehman	Lab Assistant
15. Muhammad Anees Khan	Lab Assistant
16. Muhammad Saleem	Lab Assistant
17. Muhammad Latif Khan	Lab Attendant
18. Muhammad Naeem	Lab Attendant
19. Muhammad Arif	Lab Attendant
20. Talib Hussain	Lab Attendant
21. Ahsan Razzaq	Lab Attendant
22. Tanveer Ahmad	Lab Attendant

STAFF MEMBERS

Disclaimer

The Prospectus is informal and should not be taken as binding on the Faculty. Each aspect of the educational setup, ranging from the admission procedure to the examination regulations or discipline, requires continual review by the competent authorities. The Faculty, therefore, reserves the right to change/amend any rule/s and regulations applicable to students whenever it is deemed appropriate or necessary.