Table Agenda

Ph.D. in Botany Program Overview

The Ph.D. in Botany is a rigorous research-based program designed to cultivate expertise in botanical sciences, equipping graduates for leadership roles in academia, research, and industry. The program emphasizes interdisciplinary research, addressing critical challenges such as biodiversity conservation, climate change adaptation, and sustainable agriculture—particularly relevant to Pakistan's ecological and agricultural needs.

Program Objectives

By the end of the program, graduates will:

1. Master advanced concepts in botany, including plant physiology, molecular biology, taxonomy, and ecology.
2. Develop critical research skills to analyze and synthesize complex botanical problems.
3. Contribute to solving global and local challenges, such as food security, ecosystem restoration, and climate resilience.
4. Excel in careers across academia, government, NGOs, and industry (e.g., agro-biotech, environmental consulting).

Eligibility Criteria

Applicants must meet one of the following:

1. A 16-year undergraduate degree (BS/MSc) in Botany, Plant Sciences, or related fields (Biological, Agricultural, Environmental Sciences).
2. For non-botany backgrounds (e.g., Pharmacy, Allied Health), completion of deficiency courses (up to 12 credits).
3. Minimum 50% score in the university's admission test or GRE/HAT General/equivalent (as per HEC policy).
4. CGPA ≥3.0/4.0 (or equivalent) in the last degree, per university/HEC requirements.

Program Structure (Per HEC GEP 2023)

Coursework (24 Credits)

1. Core Courses: Advanced topics in plant molecular biology, systematics, ecophysiology, and research methodologies.
2. Electives: Specialized tracks in climate change impacts, agri-biotech, conservation biology, or phytochemistry.

Research Thesis (6–12 Credits)

1. Original, publishable research under faculty supervision.
2. Thesis defense and viva voce examination.

Additional Requirements

1. Comprehensive exam after coursework.
2. Research publication in an HEC-recognized journal before thesis submission.

Duration and Credit Hours

1. Minimum: 3 years (6 semesters) – Ph.D. typically requires longer than 2 years; adjust per HEC guidelines.
2. Total Credits: 30–36 (varies by university).
3. Coursework: 18–24 credits.
4. Thesis: 6–12 credits.

Course details

S. No	Course Code	Proposed courses	Credit Hours
1	Bot-801	Plant microbe interaction	3(3-0)
2	Bot-802	Recombinant DNA Technology	3(3-0)
3	Bot-803	Plant Molecular Markers and Genomics	3(3-0)
4	Bot-804	Plant Ecology and Evolutionary Biology	3(3-0)
5	Bot-805	Advanced phytochemical techniques	3(3-0)
6	Bot-806	Advanced pharmacognosy	3(3-0)
7	Bot-807	Medicinal and aromatic plants	3(3-0)
8	Bot-808	Advances in applied ethnobotany	3(3-0)

9	Bot-809	Advanced Dendrochronology 3	3(3-0)
10	Bot-810	Plant Neutraceutic	3(3-0)