

## **B.Sc. Botany**

<b>Programme Outcomes</b>	
PO-1	To apply the knowledge of Biology to make scientific queries and enhance the comprehension potential.
PO-2	It will give a chance to understand the nature of life.
PO-3	Insist the significance of conserving a clean environment and sustainable development.
PO-4	To convey and practice social, environmental and biological ethics.
PO-5	It helps to transfer scientific knowledge both orally and practically.
PO-6	It depicts the role of plants in the functioning of the global ecosystem.
PO-7	It helps students to apply their knowledge and experience in the field of agriculture, control of pest and diseases in plants.

## PROGRAMME SPECIFIC OUTCOME

PSO	PARTICULARS
PSO-1	Being an affiliated college, the department follows the curriculum prescribed by the HNBGU (a central university). The Botany syllabus is interdisciplinary and broaden the scope for higher studies.
PSO-2	Syllabus provides fundamental knowledge of Botany and laboratory techniques to the students. The skill courses of Botany syllabus also enhance the employability of the students.
PSO-3	An Induction program is organized for UG students before the commencement of every academic program. In this program teachers tell them about the CBCS (semester system) and give a brief introduction of the course of Botany.
PSO-4	In order to assess the learning level of the students, the faculty members interact with the students to identify the slow and fast learners.
PSO-5	Faculty provides extra guidance/ practical sessions to slow learners and arrange additional support like providing reference books, notes etc. for advanced learners.
PSO-6	Faculty members explain the curriculum through innovative teaching methods such as power point presentation, assignments, discussions, traditional black-board chalk method and hands-on practical sessions.
PSO-7	Sufficient no. of laboratory classes conducted for practical exposure. Practical viva is also used as a tool to measure the learning outcomes.
PSO-8	Assignments are given on particular topics to assess knowledge, skills and capacity.
PSO-9	The course equips students within depth knowledge of plant kingdom and species existing in the eco system.
PSO-10	After completion of UG in Botany, students would gain a thorough

	<p>grounding in the fundamentals of botanical aspects which helps them to take up Botany as a subject for the higher studies and also one of the optional papers in competitive exams.</p>
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## COURSE OUTCOME

### I SEM

PAPER	PAPER NAME	OUTCOME
I	Bio-diversity (Microbes, Algae, Fungi and Archegoniate).  (Theory + Practical)	<p>It enables students about basics of biodiversity from microbes to gymnosperms. It helps them to sharpen their concepts of biodiversity around them.</p> <p>Lab. Course- learn the microscopic techniques, staining procedures, external, internal structure of cryptogams and phanerogams.</p>

### II SEM

PAPER	PAPER NAME	OUTCOME
II	Plant Ecology and Taxonomy  (Theory + Practical)	<p>Students learn about the interaction between biotic and abiotic components of the environment. They will acquire knowledge of concept of energy flow in the eco system, different types of pollution.</p> <p>They get familiar with external structure, habit, habitat of plants, taxonomical hierarchy, ICN nomenclature, Herbarium preparation etc.</p> <p>Lab. Course- understand morphological and reproductive characters of different plant families.s</p> <p>Practically students able to find out the ecological parameters such as plant species distribution, abundance and density in a defined area by quadrature method.</p>

### III SEM

<b>PAPER</b>	<b>PAPER NAME</b>	<b>OUTCOME</b>
III	Plant Anatomy and Embryology (Theory + Practical)	<p>Students get knowledge regarding anatomical peculiarities amongst different types of plant cells and tissues.</p> <p>They also learn structure, function of reproductive organs in plants, mechanism of seed formation, their dispersal and embryogenesis.</p> <p>Lab. Course- Students able to understand the internal structure of monocot and dicot (stem, root and leaf) through section cutting/ permanent slides. They also get knowledge of internal structure of anther, types of ovules and isolation of endosperm.</p>

### IV SEM

<b>PAPER</b>	<b>PAPER NAME</b>	<b>OUTCOME</b>
IV	Plant Physiology and Metabolism (Theory + Practical)	<p>Students understand important physiological activities in the plant (like photosynthesis, transpiration, ascent of sap etc.) which are essential to sustain life.</p> <p>It also enhances their knowledge about micro and macronutrients which are essential for the growth and development of plants.</p> <p>Lab. Course- Students gain knowledge of different physiological process of plants</p>

		through their performance like separation of plant pigment through paper chromatography, plasmolysis, osmosis, effect of different factors on transpiration, photosynthesis, respiration etc.
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## V SEM

<b>PAPER</b>	<b>PAPER NAME</b>	<b>OUTCOME</b>
V	Genetics and Plant Breeding (Theory + Practical)	<p>The paper develops mathematical approach amongst the students through Mendelian ratio (mono, di &amp; trihybrid crosses) and chi-square test. Gives knowledge of principles of heredity, genetic disorders, mutation, cytoplasmic inheritance and sex linked inheritance.</p> <p>It also boosts up their knowledge regarding different tools and techniques of plant hybridization to get hybrids which is helpful to raise the crop production and improvements.</p> <p>Lab course- working out problems related to genetics.</p> <p>Students learn the techniques of emasculation, crossing and bagging.</p>

## VI SEM

<b>PAPER</b>	<b>PAPER NAME</b>	<b>OUTCOME</b>
VI	Economic Botany and Biotechnology (Theory + Practical)	Students learn about Ethnobotanical important plant diversity to human kind and other animals.

		<p>It also provides an opportunity to hands on important biotechnological instruments and techniques like centrifugation, tissue culture, gel electrophoresis, blotting techniques etc.</p> <p>Lab course- Students get knowledge of economically important plants and their products.</p> <p>Students will be able to learn the scope of plant tissue culture, DNA markers and blotting techniques.</p>
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### **SKILL ENHANCEMENT COURSES (FROM III SEM TO VI SEM)**

#### **III, IV & V SEM**

<b>PAPER</b>	<b>PAPER NAME</b>	<b>OUTCOME</b>
Skill Enhancement Course	Plant Diversity and Human Welfare	The paper makes students aware about biodiversity and its conservation through R <sup>3</sup> methods (Reduce, Reuse & Recycle).

#### **VI SEM**

<b>PAPER</b>	<b>PAPER NAME</b>	<b>OUTCOME</b>
Skill Enhancement Course	Biofertilizers	The study helps the students for their self-employment, gives idea of eco-friendly and low-cost fertilizers. It gives information regarding adverse effects of chemical fertilizers. Promote the value of organic products and also share information regarding organic farming and waste management.