

Department of Botany

Programme Outcomes, Programme Specific Outcomes and Course Outcomes

Programme outcomes (POs), Program Specific outcomes (PSOs) and Course outcomes (COs) of the Programmes offered by the University

Programme outcome (POs) : As per Syllabus(BOS, Botany):-

The B.Sc. - Botany curriculum is designed to equip students with subject domain knowledge and technical skills pertaining to plants in a holistic manner. It aims to train the students in all the areas of plant sciences. Students have exposure to cutting-edge technologies that are currently used in the subject. They are made aware about the social and environmental issues, significance of plants and their relevance to the national economy.

Course Outcomes (COs): As per Syllabus(BOS, Botany):-

PSO1. A student completing the course is able to understand different branches of Botany such as systematics, evolution, ecology, developmental biology, physiology, biochemistry, plant interactions with microbes and insects, morphology, anatomy, reproduction, genetics and molecular biology of various life-forms.

PSO2. They become competent enough in various analytical and technical skills related to plant sciences.

PSO3. The student completing the course is able to identify various life forms of plants, design and execute experiments related to basic studies on evolution, ecology, developmental biology, physiology, biochemistry, plant interactions with microbes and insects, morphology, anatomy, reproduction, genetics, microbiology, molecular biology, recombinant DNA technology, proteomics and transgenic technology. Students are also familiarized with the use of bioinformatics tools and databases and in the application of statistics to biological data.

PSO4. The student completing the course is able to know tools and techniques in plant sciences and develop scientific temperament and research attitude.

S.No.	Name of the course (Paper)	Course Outcome
1.	Cell Biology, Cytology & Genetics	Course Objectives: The paper deals with Mendelian and non-Mendelian inheritance, quantitative genetics, molecular markers and linkage mapping, prokaryotic and eukaryotic genome-structure, gene function and regulation, epigenetics, cytogenetics and crop evolution. Course Learning Outcomes: 1. They understand the pattern of inheritance in various life forms. 2. They develop a strong fundamentals basics for further molecular studies.
2.	Cryptogams (Diversity of Algae & Bryophytes)	Course Objectives: This course aims to increase the understanding of the students about the diversity of lower plants, their classification, structure and growth. Course Learning Outcomes:

		The students will develop understanding about the diversity, identification, classification and economic importance of lower plants.
3.	Plant Development & Reproduction	<p>Course Objectives: This course aims at making the students acquainted with the fundamentals and present understanding of the mechanisms associated with development, differentiation and structure of various plant organs, the metabolic and physiological changes occurring in them.</p> <p>Course Learning Outcomes: Student will develop the understanding of growth, development and reproduction in plants as well as understand the physiological and metabolic changes happening along with the environmental impact.</p>
4.	Resource Utilization and Conservation	<p>Course Objectives: The paper deals with origin, diversification, utility and conservation strategies of natural resources. It focuses the roles of various organization related to the plant sciences.</p> <p>Course Learning Outcomes:</p> <ol style="list-style-type: none"> 1. They understand the pattern origin, diversification and cultivation of plants in nature. 2. They are able to design the strategies for conservation of these natural resources. 3. They become well worst with the role and functions of various organizations
5.	Cytogenetics & Molecular Biology	<p>Course Objectives: The objective of the present course content is to provide a foundation and background in cellular and acellular entities of plants and animals, cell structure in relation to functions, eukaryotic genome structure (including nuclear and organellar), and regulatory mechanisms.</p> <p>Course Learning Outcomes: The students will be learning</p> <ol style="list-style-type: none"> 1. About the acellular entities including infective particles comprising only protein or RNA, which are parasites of plants and/or animals and of the observations/proposals which challenge the established dogmas, such as, cell being the basic unit of life or higher plants are multicellular rather than supracellular, and current state of knowledge about the plant cell structure and their turn over, starting from cell wall to chromatin, in relation to their functions. 2. Students will understand the role of plant cytoskeleton and accessory proteins in major cellular processes of plants. 3. Student will focus on various components of the eukaryotic nuclear and organellar genome, with special reference to their regulatory role
6.	Plant Physiology	<p>Course Objectives: This course aims to educate student about the mechanism and physiology life processes in plants. It focus on the plant nutrient uptake and translocation, photosynthesis, respiration and nitrogen metabolism.</p>

		<p>Course Learning Outcomes:</p> <ol style="list-style-type: none"> 1. Students will be able to understand the various physiological life processes in plants 2. They will also gain about the various uptake and transport mechanisms in plants and are able to coordinate the various processes. They understand the role of various hormones, signalling compounds, thermodynamics and enzyme kinetics. During the course students will gain knowledge about various mechanisms such as channel or transport proteins involved in nutrient uptake in plants.
7.	Diversity of Microbes & Fungi	<p>Course Objectives: This course aims to increase the understanding of the students about the diversity of microorganisms including fungi, their classification, structure and growth.</p> <p>Course Learning Outcomes: The course will increase the understanding of the students about the classification, structure, role and infectious cycle of microbes and Fungi.</p>
8.	Diversity of Pteridophytes & Gymnosperms	<p>Course Objective:- The course focuses on morphology, anatomy, reproduction and evolution in Pteridophytes and Gymnosperms.</p> <p>Course Learning Outcomes:- The students develop the basic understanding of important characteristics, anatomy, reproduction and evolution along with economic importance of these two groups</p>
9.	Taxonomy of Angiosperms	<p>Course Objectives: This course aims to add to understanding of the students about the diversity of plants, their Description, Identification, Nomenclature and their classification including recent advances in the field.</p> <p>Course Learning Outcomes: The students will be learning</p> <ol style="list-style-type: none"> 1. The students will know about the systematic position of Genera, Species and , Families. 2. The students develop knowledge about plant nomenclature.
10.	Reproductive Biology of Angiosperms	<p>Course Objective:- The paper contains structure and function of reproductive organs and their significance in plant reproduction. Pollination, Fertilization, Embryogenesis are the areas which are stressed upon.</p> <p>Course Learning outcomes:-</p> <ol style="list-style-type: none"> 1. Students will able to differentiate reproductive organs at Morphological, Anatomical, Physiological and Biochemical level. 2. This knowledge will be help to apply in agriculture for nroduction of hybrids. 3. The allergic problems in Humans can be justified on the basis of pollens.
11.	Environmental Ecology	<p>Course Objectives:</p>

		<p>This course focus on the Environmental Impact Assessment (EIA), Energy resourses, various types environmental pollution, water pollution and conservation strategies with sustainable management.</p> <p>Course Learning Outcomes: The students will be learning</p> <ol style="list-style-type: none">1. They will be understand the factors leading to Environmental degradation, their reasons and their impact on the Environment.2. This knowledge can help to form strategies for conservation and sustainable management under the given legislative measures.
--	--	--