Program Specific Outcomes and Course Outcomes for B.Sc, Botany 2020-21 & 2021-22

Program Specific Outcomes

PSO 1: Students acquire fundamental Botanical knowledge through theory, practical's and observation of surrounding environment.

PSO 2: Understand the morphology and reproduction of non-flowering plants (Algae, Fungi, Bryophytes and Pteridophytes including bacteria and viruses) and flowering plants (Gymnosperms & Angiosperms), also identify them in the field and herbarium.

PSO 3: To create awareness about cultivation, conservation and sustainable utilization of the plant biodiversity.

PSO 4: Understand the basic concepts of Developmental Botany, Angiosperm taxonomy, anatomy, physiology, ecology, and Ethnobotany.

PSO 5: Students able to start nursery, mushroom cultivation, biofertilizer production, organic farming and horticultural practices. Also acquire skills in Greenhouse technology, Tissue culture and Plant Breeding through value-added courses.

PSO 6: Students are also familiarized with the use of Biostatistics and Computer applications for analysis of biological data.

PSO 7: Perform the laboratory techniques in anatomy, cytology, physiology, tissue culture, biochemistry, biotechnology, molecular biology, apply in research and industry level.

PSO 8: Understand contribution of Botany in increase and improve supply of medicines, food, fibres, and other economical plant products.

PSO 9: Create platform for higher studies, research attitude in Botany and facilitate students to take-up successful career in Botany for their employment.

COURSE OUTCOMES

COURSE OUTCOMES 2020-2021 & 2021-22					
Department of Botany 2020-21 & 2021-22					
Sl No.	**Year**	**Course Code**	**Course Name**	**CO No.**	**Course Outcome**
1.	2020-2021	UBOT 111	Thallophytes, Microbes and Plant Pathology	CO1	To understand the ecology, distribution, thallus organisation, classification, reproduction and life cycles of different algal and fungal specie.
				CO2	To explore the economic importance of algae and fungi.
				CO3	To study the symbiotic associations, types, significance of Lichens and Mycorrhiza
				CO4	To understand the morphology, classification, structure and reproduction of Bacteria and Viruses
				CO5	To study the various diseases caused by microorganisms, their symptoms, disease cycle and control measures.
2.	2020-2021	UBOT 121	Archegoniatae (Bryophytes, Pteridophytes, Gymnosperms and Paleobotany)	CO1	To study the evolutionary importance of Bryophytes and their transition to land plants.
				CO2	To understand the general features and Economic importance of Bryophytes, Pteridophytes, Gymnosperms.
				CO3	To study the external morphology, internal structure, reproduction and life cycle of different familiar genera of Bryophytes, Pteridophytes and Gymnosperms.
				CO4	To understand the significance of Paleobotany and its applications, fossils and fossilization process.
				CO5	To study in detail fossilized genera of Pteridophyes and Gymnosperms.

3.	2020-2021	UBOT 112	Botany Supportive Paper I (Allied Botany)	CO1	To gain the basic knowledge, salient features and economic importance of Bacteria, Cyanobacteria, Algae, Fungi and Archegoniatae.
				CO2	To understand the structure and reproduction of Monerans i.e.: *E. coli* & *Nostoc*
				CO3	To understand the structure, reproduction and life cycles of important genera of Algae, Fungi and Archegoniatae
				CO4	To study the morphology of Flower, Fruit and Seed. Vegetative and Floral characters of Annonaceae, Asclepiadaceae, Nyctaginaceae and Poaceae families.
				CO5	To study the economically important plants and their uses in our daily life.
4.	2020-2021	UBOT 122	Botany Supportive Paper II (Allied Botany)	CO1	To study the plant cell and important cell organelles i.e.: Cell wall, Chloroplasts, Mitochondria and Nucleus with their structure and function.
				CO2	To understand the primary internal structure of dicot and monocot root, stem, leaf and secondary growth in dicot stem and root.
				CO3	To understand the physiological aspects of Plants i.e., Ion Uptake, Photosynthesis, Nitrogen fixation and Phytohormones
				CO4	To study the Agricultural and Industrial uses of Microbes and Food microbiology
				CO5	To understand the basic concepts of Plant ecology i.e. Ecosystems, Energy flow, Food chain, Food web, Ecological Pyramids, Forests and their conservation.
3	2020-2021	ENVS 123	Environmental Studies	CO1	To understand the scope, importance and multidisciplinary nature of Environmental studies.
				CO2	To understand the basic concepts of Environmental Policies, Practices, Environmental Laws and relationship between Human communities and the Environment.
				CO3	To study different kinds of Ecosystems, Renewable and Non-renewable resources, Biodiversity and Conservation aspects.
				CO4	To gain basic knowledge on different kinds of Pollution, Nuclear hazards causes, effects and control measures

				CO5	To make a field visit to river, forests, local polluted sites, and nearby ecosystems for live study of environmental issues.
3.	2021-22	UBOT 231	Developmental Botany (Cell Biology, Angiosperm Anatomy and Embryology)	CO1	To study the ultrastructure of Eukaryotic cell and important cell organelles with their structure and function.
				CO2	To understand the cell cycle, cell division (Mitosis and Meiosis) and its importance in the growth, development and reproduction of Plants.
				CO3	To understand the internal structure and functions of different plant tissues and organs.
				CO4	To understand the process of normal and anomalous secondary growth in plants.
				CO5	To study the organization of flower, pollination mechanisms, adaptations and Fertilization in Angiosperms.
				CO6	To understand the embryological aspects of development (Embryo, Endosperm, Apomixis and Polyembryony) in Angiosperms.
4.	2021-22	UBOT 233	External Morphology of Angiosperms	CO1	To know the History and Need of correct Identification of Plants.
				CO2	To understand the morphology of Root, Stem, Leaves, Flower, Fruit and Seed.
				CO3	To study various Root, Stem, Leaf modifications and its importance in plants.
				CO4	To study various types of Inflorescences, Fruits and their importance in Plant classification.
				CO5	To study the horticultural applications of Flowers and Crude drug preparation from fruits.
5.	2021-22	UBOT 241	Field Botany (Ecology and Angiosperm Taxonomy)	CO1	To understand the basic concepts of plant ecology; soil, water and their interactions.
				CO2	To learn about the interaction between biotic and abiotic components of the environment.

				CO3	To know about the concepts of energy flow, Food chain, Food web, Ecological Pyramids, Succession and Biogeochemical cycles.
				CO4	To understand basic concepts of Plant taxonomy Classification, Nomenclature and Identification, Flora, Keys, Herbarium and ICBN Rules.
				CO5	To study various types of Plant classifications, and important families of Polypetalae, Gamopetalae and Monochlamydeae.
6.	2021-22	UBOT 243	Herbal Botany	CO1	To understand the basic concepts of Herbal Medicine and Pharmacognosy.
				CO2	To study the medicinal uses of the important herbs Tulsi, Ginger, Fenugreek, Indian Goose berry (Amla) and Ashoka.
				CO3	To understand the phytochemical tests for screening of Secondary metabolities and biological testing of herbal drugs.
				CO4	To study the phytochemistry of important medicinal herbs *Catharanthus roseus, Withania somnifera* and *Centella asiatica*.
				CO5	To understand the common medicinal formulations and Traditional Knowledge Digital dictionary (TKDL)