

DEPARTMENT OF BOTANY

COURSE OUTCOME

Semester	Core Course	Course content	Outcomes
I	DC-1 AND DC-2 Credits-4 (in each DC)	Plant diversity- I (Phycology, mycology, plant pathology, Microbiology)	<ul style="list-style-type: none">• Understand the diversity of different plant groups.• Learn about the structure, pigmentation, food reserve and methods of reproduction and role in different fields of algae and fungi and their economic importance and symbiosis of fungi• Study some plant diseases with special reference to the causative agents, symptoms, ethology and control measures and study about the first land plants, their characters, Life cycle and ecological and economical importance.• Develop the idea about the internal structure of c different parts of plants. Of different parts of plants.
	DC-1 AND DC-2 Credits-2 (in each DC)	Practical	<ul style="list-style-type: none">• Set up simple and compound microscope examine different micro-organisms.• Cut of sections of different parts of plants and studied under microscope. They can Draw the internal structure plant parts. Identify different cryptogamic and pathological


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			specimens
II	DC-3 AND DC-4 Credits-4 (in each DC)	Plant Diversity-II (Bryophytes Pteridophytes, Gymnosperms, Palaeobotany, Morphology and anatomy)	<ul style="list-style-type: none"> Learn about the diagnostic characters and classification, life cycle and economic impotence of Pteridophytes and Gymnosperms Develop the idea about methods of fossilisation and fossil plants. Learn about different types of inflorescence, flowers, fruits and seeds, Angiosperm family.
	DC-2 AND DC-4 Credits-2 (in each DC)	Practical	<ul style="list-style-type: none"> Dissect out and mount the floral parts during morphological study, prepare herbariums and identify different plants and group.
III	DC-5,DC-6 AND DC-7 Credits-4 (in each DC)	Plant systematics, Plant ecology, Phyto geography , Biodiversity, and economic botany	<ul style="list-style-type: none"> Learn about different types of inflorescence, flowers, fruits and seeds, Angiosperm family and their commercial value.
	DC-5,DC-6 AND DC-7 Credits-2 (in each DC)	Practical	<ul style="list-style-type: none"> Dissect out and mount the floral parts during taxonomic study, prepare herbariums specific to taxonomic study and identify different plants and grouped in and apply it family.

			<ul style="list-style-type: none"> • To know the ecological environment and different plant and their economic value.
IV	DC-8,DC-9 AND DC-10 Credits-4 (in each DC)	Cell Biology and Plant breeding, Genetics and Biostatistics, Reproductive biology of angiosperm	<ul style="list-style-type: none"> • Develop the idea about nuclear structure and chromosomal structure and biochemical nature nucleic acids. • Know about how organism functions at the level of the Genes and how the Genes control and inherit the characters of organisms. • Understand the process of synthesis of proteins and role of Genetic Code in polypeptide formation. • Learn about different kind of mutation of Genes, chromosomes, split gene and Transposons. • To learn the scope and importance of Molecular Biology and Microbiology. • Learn about the discovery of new characteristic features of viruses and bacteria and their mode of replication and reproduction. • Understand the microbial genetics and recombination in bacteria.

			<ul style="list-style-type: none"> • Know the economic importance of bacteria in different fields of human welfare. • Learn the objectives of Plant Breeding. • Understand the procedure of Mass and Pure line. Selection, heterosis and hybrid: seed production, their advantages and limitations. • Know about the role of Biotechnology in crop improvement. • Measures of Central-tendency, Standard error and Standard deviation. • Test for Goodness of fit by Chi- Square method.
	<p>DC-8,DC-9 AND DC-10</p> <p>Credits-2(in each DC)</p>	Practical	<ul style="list-style-type: none"> • Prepare, squash and stain plant materials to study different mitotic stages and meiotic stages. • Measures of Central-tendency, Standard error and Standard deviation. • Know about the role of Biotechnology in crop improvement.
V	<p>DC-11,DC-12 , DSE-1 , DSE-2 and SEC-1</p> <p>Credits-4 (in each)</p>	Plant Physiology , Plant Metabolism, Plant breeding and Industrial Microbiology	<ul style="list-style-type: none"> • Learn about different structures: of proteins, DNA and RNA. Types of RNA. • Know about the characteristics, classification and mode of action and roll of enzymes

			<ul style="list-style-type: none"> • Understand the process of Transpiration, Photosynthesis, Respiration and Nitrogen metabolism. • Know about plant growth regulators and its functions and applications. • Understand the role of light and photo chromic in flowering in plants • Know about Vernalization and Senescence in plants • Measures of Central-tendency, Standard error and Standard deviation. • Know about the role of Biotechnology in crop improvement. • Do Gram staining of bacteria.
	<p>DC-11,DC-12 , DSE-1 , DSE-2 AND SEC-1</p> <p>Credits-2 (in each)</p>	<p>Practical</p>	<ul style="list-style-type: none"> • Understand the process of Plasmolysis, measure the leaf and determine transpiration area and determine transpiration rate per unit area. • Develop the idea about imbibitions. • Determine the rate of photosynthesis and evolution of oxygen and Respiration and Evolution of CO₂ • Do Gram staining of bacteria. • Measures of Central-tendency, Standard error and Standard deviation.

VI	<p>DC-13,DC-14 , DSE-3 , DSE-4 and SEC-2</p> <p>Credits-4 (in each)</p>	<p>Bimolecular, Plant Bio technology, Stress Biology and Medicinal botany</p>	<ul style="list-style-type: none"> • Students will able to learn the cellular Totipotency, callus culture, plant regeneration Somatic Embryogenesis, Artificial seed, Protoplast culture and it's application. • To learn the application of Biotechnology Plant and Human welfare • To know about Recombinant DNA Technology and methods of Gene transfer • Know about history and relevance of herbal drug in Indian system of Medicine and importance of primary and secondary metabolites. • Understand the techniques for drug evaluation and learn about pharmacologically active constituents and the importance of medicinal
	<p>DC-13,DC-14 , DSE-3 , DSE-4 and SEC-2</p> <p>Credits-2 (in each)</p>	<p>Practical</p>	<ul style="list-style-type: none"> • Prepare the buffer solution and do qualitative test of proteins and Carbohydrates. • Understand the method of Tests for tannin pure alkaloid and identify Different medicinal plants. • Able to estimate the solid biodegradable and non

			biodegradable waste generate by a domesticate system.
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DEPARTMENT OF BOTANY
MAPPING OF PROGRAMME OUTCOME

PO1(Critical thinking)	PO2(Effective Communication)	PO3(Social interaction)	PO4(Ethi
DC-1	DC-5	SEC-1	DC-7
DC-2	DC-6	SEC-2	
DC-3		DSE-1	
DC-4			

PROGRAMME SPECIFIC OUTCOME

1. Know the importance and scope of the discipline.
2. Inculcate interest in and love of nature with its myriad living forms.
3. Impart knowledge of Science as the basic objective of education.
4. Develop scientific attitude to make students open minded, critical and curious.
5. Develop an ability to work on their own and to make them fit for their society.
- 6 Explore themselves to the diversity amongst life forms.
7. To develop skill in practical work, experiments, equipments and laboratory use along with
Collection and interpretation of biological materials and data.

8. Make aware of natural resources and environment and the importance of conserving it.
9. Develop ability for the application of the acquired knowledge in the field of Life so as to
Make our country self reliant and self sufficient.
10. Appreciate and apply ethical principles to biological science research and studies.
11. To provide thorough knowledge about various plant groups from primitive to highly Evolved.
12. To make the students aware of applications of different plants in various industries.
13. To highlight the potential of these studies to become an enterpruner.
14. To equip the students with the skills related to laboratory as well as field based studies.
15. To make the students aware about conservation and sustainable use of plants.
16. To create foundation for further studies in Botany.
17. To address the socio-economical challenges related to plant sciences.
18. To facilitate students for taking up and shaping as successful carrier in Botany.

PROGRAMME OUTCOME

PO1. CRITICAL THINKING: Upon completion of the Botany course, majors are eligible

Study in depth about fungi, algae, bryophytes pteridophytes. Gymnosperms. Angiosperms. .diseases, growth, metabolism, biotechnology and the structure between different groups. Upon completion of a botany Degree, majors are able to study plant life along with finding solutions to problems related To that of forest and agriculture.

PO2. EFFECTIVE COMMUNICATION: Communicating about Botany has the potential to rise Of Public interest and understanding plant I life around the world. Botany communication Presents e framework to raise awareness, implementation and evaluation of their Botany Communication efforts.

And describe the underlying principles

PO3. SOCIAL INTERACTION: Be able to identify

Behind botanical techniques relevant to academia and different fields of industry, Agriculture, horticulture and gardening.

PO4. ETHICS Students will appreciate the main role of Botany in our environment and a use

This as basis ethical behaviour in issues facing Botanists including an a understanding of

Odes handling of chemicals and other instruments, environmental issues, use GMO crops

And key issues facing our environment in e energy, health and medicine.

PO5. ENVIRONMENT AND SUSTAINABILITY. Botany has a crucial role to find sustainable

Solutions to far-reaching challenges, including Energy provision, Environmental protection,

Food and water safety, Global healthcare and explore the resources to learn more about

Botany's role in sustainability.

**PO6. SELF DIRECTED AND LIFE LONG LEARNING: The role Botany acquires
flexible**

**Knowledge and problem solving skills facilitate the expected development of our
modern**

**Society. This area helps B.Sc Botany graduates to communicate the concept and results
Laboratory experiments through effective independent writing and oral communication
skills.**


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