

DEPARTMENT OF BOTANY

COURSE OUTCOME

2024-25

Semester	Core Course	Course content	Outcomes
I	BOT-DC-MJ-101 : Diversity of Cryptogams	Algae,Fungi,Lichen, Bryophytes, Pteridophytes.	<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 economic importance.• Develop the idea about the internal structure of c different parts of plants. Of different parts of plants.
	BOT-DC-MJ-101 : Diversity of Cryptogams	Practical	<ul style="list-style-type: none">• Set up simple and compound microscope examine different

			<p>micro-organisms.</p> <ul style="list-style-type: none"> ● Cut of sections of different parts of plants and studied under microscope. They can draw the internal structure plant parts. Identify different cryptogammic and pathological specimens
II	BOT-DC-MJ-201 : Diversity of Phanerogams	Gymnosperm, Angiosperm, Morphology of Angiosperm, Plant Nomenclature, Contribution of Eminent Botanists	<ul style="list-style-type: none"> ● Learn about the diagnostic characters and classification, life cycle and economic impotence of Gymnosperms ● Develop the idea about methods of fossilisation and fossil plants. ● Learn about different types of inflorescence, flowers, fruits and seeds, Angiosperm family.
	BOT-DC-MJ-201 : Diversity of Phanerogams	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	BOT-DC-MJ-301 : Gymnosperm & Palaeobotany	Gymnosperm, Paleobotany	<ul style="list-style-type: none"> ● Learn about different types of inflorescence, flowers, fruits and seeds, Gymnosperm family and their commercial value.
	BOT-DC-MJ-301 :	Practical	<ul style="list-style-type: none"> ● Dissect out and mount the floral parts during

	Gymnosperm & Palaeobotany		<p>taxonomic study, prepare herbariums specific to taxonomic study and identify different plants and grouped in and apply it family.</p> <ul style="list-style-type: none"> ● To know the ecological environment and different plant and their economic value.
IV	<p>Major Course - 6 (MC-6) : Plant Anatomy and Plant Ecology,</p> <p>Major Course - 7 (MC-7) : Plant Physiology</p>	<p>Plant Anatomy , Plant Ecology, Plant Physiology.</p>	<ul style="list-style-type: none"> ● Develop the idea about nuclear structure and chromosomal structure. ● Know about how organism functions at the level of the Genes and how the Genes control and inherit the characters of organisms. ● Learn about different kind of Anatomical Peculiarity. ● To learn the scope and importance of Ecology. ● Learn about the discovery of new characteristic features of viruses and bacteria and their mode of replication and reproduction. ● Know the

			<p>economic importance of bacteria in different fields of human welfare.</p> <ul style="list-style-type: none"> ● Learn the objectives of Plant Breeding. Understand the process of Transpiration, Photosynthesis, Respiration and Nitrogen metabolism. ● Know about plant growth regulators and its functions and applications. ● Know about the role of Biotechnology in crop improvement.
	<p>Major Course - 6 (MC-6) : Plant Anatomy and Plant Ecology, Major Course - 7 (MC-7) : Plant Physiology</p>	<p>Practical</p>	<ul style="list-style-type: none"> ● Prepare, the slides of different growth stages. ● Measures of Central-tendency, Standard error and Standard deviation for quadrat analysis. ● Know about the role of Biotechnology in crop improvement. Understand the process of Transpiration, Photosynthesis, Respiration and Nitrogen metabolism. ● Know about plant

			<p>growth regulators and its functions and applications.</p>
V	<p>BOT-DC-MJ-501:Evolution of Early Land Plants</p> <p>BOT-DC-MJ-502: Morphology and Taxonomy of Angiosperms</p> <p>BOT-DC-MJ-503: Cell Biology and Plant Breeding</p> <p>BOT-DC-MJ-504 : Palynology and Reproductive Biology of Angiosperms</p>	<p>Bryophytes and Pteridophytes , Plant Morphology , Plant Systematics , Cell biology , Plant Breeding , Palynology, Reproductive Biology of Angiosperms.</p>	<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 ● 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>BOT-DC-MJ-501: Evolution of Early Land Plants</p> <p>BOT-DC-MJ-502: Morphology and Taxonomy of Angiosperms</p> <p>BOT-DC-MJ-503: Cell Biology and Plant Breeding</p> <p>BOT-DC-MJ-504 : Palynology and Reproductive Biology of Angiosperms</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 imbibition. ● 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.
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DEPARTMENT OF BOTANY
MAPPING OF PROGRAMME OUTCOME

PO1(Critic	PO2(Effec	PO3(Soc ial	PO4(Eth ics)	PO5(Laborat ory skill and	PO6(Envi ronment	PO7(self-directed and lifelong learning)
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al thinki ng)	tive Com muni catio n)	interacti on)		instrumentati on)	and Sustainabi lity)	
MJ-101	MC-6	MJ-501	MC-7	MJ-501	MJ-101	MJ-201
MJ-201	MC-7	MJ-502		MJ-502	MJ-201	MJ-503
MJ-301		MJ-503		MJ-503	MJ-301	MJ-504
		MJ-504		MJ-504		

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, equipment's 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 o 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 enter pruner.**
- 14. To equip the students with the skills related to laboratory as well as field based studies.**
- 15. To make the students aware a about conservation and sustainable use of plants.**
- 16. To create foundation for further studies in Botany.**
- 17. To address the socio-economic 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.**

Principal

Abhin Kumar Saxena