



GKSM Govt College Tanda Urmar

B.Sc. Medical

(Department of Botany)

POs and COs



GKSM Govt College Tanda Urmar

PROGRAM OUTCOMES (POs)

On successful completion of BSc Medical Program, students will be able to:

PO1	Students grasp fundamental concepts in Botany, Zoology, and Chemistry, encompassing both theoretical understanding and practical application.
PO2	Students acquire the skill of designing experiments and deducing conclusions from the results.
PO3	The enhancement of students' scientific temperament equips them to initiate their own entrepreneurial ventures.
PO4	Through comprehending the significance of biodiversity and life processes, students gain increased awareness of environmental conservation.



Course Outcomes (Cos)

SEMESTER 1

COURSE: Plant Diversity-I

CO1	Students become acquainted with the morphological and anatomical characteristics of diverse members, of algae and fungi.
CO2	Students grasp the role of algal members in addressing global warming by converting carbon dioxide into photosynthates.
CO-3	Students acknowledge the significant threat posed by fungi to crop plants and comprehend their enduring impact on economic losses.
CO4	Students grasp the significance of salt concentration in relation to the distribution of various algal members.

COURSE: Cell Biology

CO1	Students comprehend the cytoplasmic intricacies of cell membranes and cell organelles.
CO2	Students recognize the importance of nuclear pores, which facilitate communication and control between the nucleus and the rest of the cell.
CO-3	Students comprehend how subcellular organelles collaborate in the synthesis and subsequent modification of proteins, directing them to their specific locations.
CO-4	Students recognize the significance of the quasifluid nature of the plasma membrane in facilitating rapid repairs within a cell.



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SEMESTER 2

COURSE: Plant Diversity-II

CO1	Students grasp the evolutionary transition of plants from simpler algal forms to more advanced bryophytes and pteridophytes.
CO2	Students acquire the skill of reconstructing the complete life history of extinct plants through the study of fossilized pteridophytes.
CO3	Students come to understand the emergence of the seed habit in Selaginella and its broader evolutionary significance in higher plants.
CO4	Students comprehend the distinctions in characteristics among various classes of bryophytes and pteridophytes.

COURSE: Genetics

CO1	Students learn about the remarkable processes at the subcellular level as the intricate packaging of lengthy charged DNA threads inside small compartments is explained.
CO2	Students are introduced to historical events that played a crucial role in unraveling the processes of inheritance and variation.
CO3	Students gain clarity on the regulation of gene expression in both prokaryotes and eukaryotes, understanding the intricacies at various levels of transcription and translation.
CO4	Students comprehend the interactions between genes that lead to the production of a recombinant trait.



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SEMESTER 3

COURSE: DIVERSITY OF SEED PLANTS AND THEIR SYSTEMATICS- I

CO1	Students grasp the evolutionary transition from pteridophytes to gymnosperms.
CO2	The study of living fossils provides students with insights into the ancestral forms of leaves and plant structures.
CO3	The comparison of the anatomy of roots, stems, and leaves reveals interspecific evolution within the same group of plants to students.
CO4	Students gain an understanding of the fossilization process, opening their horizons to the intriguing field of paleobotany.

COURSE: STRUCTURE, DEVELOPMENT AND REPRODUCTION IN FLOWERING PLANTS-I

CO1	Students comprehend the variation in plant morphology, considering factors such as length and branching pattern.
CO2	Students are provided explanations regarding the differences in the girth of various plants, helping them understand the mechanism of secondary tissue formation.
CO3	Students gain an understanding of the distinction between pre and post-fertilization endosperm development.
CO4	Students are prompted to explore new concepts in agronomy as they learn about the initiation of self-incompatibility to encourage cross-pollination.



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SEMESTER 4

COURSE: DIVERSITY OF SEED PLANTS AND THEIR SYSTEMATICS-II

CO1	Students acquire knowledge of taxonomy, the naming of plants, and key distinctions between plant families.
CO2	Students comprehend the composition of botanical names and gain a preliminary understanding of how to write to the journal Taxon to propose amendments to botanical nomenclature.
CO3	The examination of floral and vegetative parts of certain plant families sparks students' interest in studying flowers in their own localities.
CO4	Students acquire the skill of drying, pressing, and mounting plants on herbarium sheets through their learning process.

COURSE: STRUCTURE, DEVELOPMENT AND REPRODUCTION IN FLOWERING PLANTS-II

CO1	Students comprehend the anatomical details of the distribution of different tissues in plants and the significance of their thickening materials, revealing the plant's interaction with specific stress conditions.
CO2	Students receive hands-on training in the cultivation of grafted plants.
CO3	Students learn about evolution of various pollination mechanism developed by plants over a period of time.
CO4	Students learn about various seed dispersal strategies.



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SEMESTER 5

COURSE: PLANT PHYSIOLOGY-I

CO1	Students grasp the significance of water in the life of plants, understanding how the majority of biochemical reactions crucial for plant life rely on water.
CO2	Students become aware of the capability of prokaryotic organisms in fixing atmospheric nitrogen.
CO3	Students gain an understanding of fat synthesis and storage mechanisms in plants.
CO4	Students also acquire knowledge about enzymes and their role in increasing the rate of reactions.

COURSE: PLANT ECOLOGY

CO1	Students comprehend the classification and components of the environment.
CO2	Students acquire techniques for studying the biodiversity of an area through the application of various indices.
CO3	Students understand the setting of plant communities at different substratum.
CO4	Students get to know various renewable and non-renewable sources of energy.



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SEMESTER 6

COURSE: PLANT PHYSIOLOGY-II

CO1	Students learn the mechanism of the movement of food in plant tissues.
CO2	Students understand the variation in the fixation of carbon dioxide in different plants and the associated mechanisms.
CO3	Students learn how the flowering process in plants is influenced by the duration of the light period, and they understand how to expedite flowering by extending the duration of photoperiods.
CO4	Students learn about the synthesis of various plant hormones by plants and their role in controlling plant physiology, gaining insights into different types of phytohormones and their effects on plants.

COURSE: ECONOMIC BOTANY

CO1	Students study various food crops and explore their historical development.
CO2	Students delve into the significance of spices in daily life, learning about their uses and the phytochemical composition of each spice.
CO3	Students are educated on the foundational role of medicinal plants in various medicinal systems, including the understanding of the phytochemical composition of specific medicinal plants. They also acquire the skill of identifying these medicinal plants.
CO4	Students gain knowledge about the complete processing involved in the formation of beverages, recognizing their integral role in daily life.