

SETH KESRIMAL PORWAL COLLEGE OF ARTS AND SCIENCE AND COMMERCE, KAMPTEE

B.Sc. (BOTANY) PROGRAM SPECIFIC OUTCOME

After a successful completion of this course, the student will

- Be able to cultivate Botanical observations (Flora) and nurture the interest.
- Be able to communicate to lay audiences and arouse their interest in the beauty of the nature i.e. environment and science.
- Be able to explain the core ideas and techniques of Botany at the college level.
- Be able to recognize the power of nature (Environment) and generalization in the society.
- Be able to carry out objectives analysis of the given class work material.
- Be able to recognize the importance of to study Botany as basic sciences in this modern biotechnological era.
- Be work independently able to collaborate effectively in team work.
- Be able to continuously enrich them through lifelong journey.
- Students can conceive the knowledge of General characteristics, nature and economic importance of viruses, bacteria, mycoplasma, algae, fungi, bryophytes, pteridophytes, gymnosperms and angiosperms.
- Be able to identify the angiosperm flora in nature up to family level.

Thaware

Dr. Jaysshree Thaware
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Principal
S.K.P. College Kamptee



BOTANY SUBJECT (COURSE) OUTCOME

B.Sc. SEMESTER-I B-1 Viruses, Prokaryotes, Algae

B-2 fungi, Lichen, Plant Pathology and Bryophyta

On completion of this course, successful students will be able to

- Understand the living nature of Prokaryotes like viruses, mycoplasma, bacteria and Cyanobacteria.
- They can conceive the knowledge of General characteristics and nature of viruses, Types, their multiplication and Economic Importance.
- Understand the structure, Properties and reproduction of Mycoplasma
- Learn the bacteria, Algae, fungi and Bryophytes with respect to their structure, reproduction and Economic Importance.
- They can familiarize the symbiotic relationship of lichen and Saprophytic and parasitic relationship of Fungi.
- Find relationship between Host and pathogen and disease control measures with respect to diseases caused by viruses, bacteria and fungi.
- Can understand the relationship of evolution from aquatic habitat to amphibian habitat of Bryophytes.
- Conceive the concept of alteration of generation.
- Can analyze the life cycles of bacteria, cyanobacteria, algae, fungi and bryophytes.
- They got knowledge of handling the class work material in laboratory and can find relation between permanent slides of material and their sections.

B.Sc. SEMESTER-II B-3 Pteridophytes and Gymnosperms

B-4 Palaeobotany and Morphology of Angiosperms

On completion of this course, successful students will be able to

- Understand the morphology and anatomy of first land plants means pteridophytes.
- Learn the life histories of *Rhynia* a fossil plant, *Selaginella* and *Equisetum*.
- Conceive the knowledge of Alternation of generation and economic Importance of pteridophytes.

- Understand Evolutionary development in land plants like, apogamy, apospory, stellar development, heterospory and seed habit.
- Understand the concept of Phanerogams.
- Learn about Evolutionary trends in Gymnosperms with respect to its general characters and economic importance and alteration of generation.
- Introduced to new topic Palaeobotany i.e. fossil plants, fossilization theories, Geological time scale, types of fossils etc.
- Analyzed the difference between living plant and fossil plant.
- Understand the external structure i.e. morphology of Angiosperm.
- Familiarize with Morphology of various Parts of plants i.e. root, stem, leaf, inflorescence, flower.

B.Sc. SEMESTER-III B-5 Angiosperm Taxonomy

B-6 Cell Biology, Plant Breeding and Evolution

On completion of this course, successful students will be able to

- Can relate the difference in gymnosperms and angiosperms.
- Understand the phylogeny of angiosperms i.e. origin of angiosperms.
- Can study the difference in fossil plants of angiosperms
- Familiarize the term Angiosperm taxonomy, Principles of botanical nomenclature, classification, systems of classification and modern trends in taxonomy etc.
- Expand their knowledge by studying the different family members on the basis of their gross morphology of dicots and monocots.
- Conceive the concepts of plant cell and cell organelles like Cell wall, cell membrane, nucleus, E.R., Golgi complex, vacuoles, ribosome's, mitochondria and chloroplasts.
- Familiarize with the term Chromosomal organization, sex chromosomes in plants.
- Can learn the cell division methods i.e. mitosis and meiosis theoretically and practically.
- Define and analyze the term biostatistics.
- Find the relation of plant breeding and evolution.

B.Sc. SEMESTER-IV B-7 Angiosperm Anatomy and Embryology

B-8 Genetics and Molecular Biology

On completion of this course, successful students will be able to

- Can understand the basic body plan and modular type of growth, different types of meristem.
- Can study the permanent tissue and difference between simple and complex tissue.
- Understand the anatomical differences in primary and secondary structure of monocot and dicot root, stem and leaf.
- Can easily identify the anatomical differences and positions of vascular bundles, cambium, periderm, growth rings, sap and heart wood.
- Conceive the knowledge of the term senescence and abscission.
- Determine the differences between microsporogenesis and Megasporogenesis.
- Analyze the term of double fertilization and triple fusion
- Learn the laws of inheritance, interaction of genes, linkage of gene and chromosomes, crossing over and mutations.
- Can determine the structural changes in chromosomes.
- Learn about the structure of DNA and concept of gene, DNA damage and repair.
- Can define the analyze the term genetic code, gene expression and regulation of gene interaction.

B.Sc. SEMESTER-V B-9 Biochemistry and Plant Physiology-I

B-10 Plant Ecology-I

On completion of this course, successful students will be able to

- Conceive the terms of carbohydrates, lipids, amino acids and enzymes.
- Understand the plant water relations and water conduction through xylem and transport of material through phloem.
- Find the relation of mineral nutrition.
- Learn the respiration phenomenon in plants and different physiological processes in the respiration.
- Familiarize the term photosynthesis and physiology behind the different cycles of photosynthesis
- Can understand the nitrogen metabolism.
- Find relation in the terms of ecology and climate.

- Learn about Pedogenesis means soil formation, soil profile, soil properties.
- Understand biotic and abiotic factors and biogeochemical cycles.
- Conceive the term Ecosystem.
- Learns Phytogeography.

B.Sc. SEMESTER-VI B-11 Plant Physiology-II and Biotechnology

B-12 Plant Ecology-II, Techniques and Utilization of Plants

On completion of this course, successful students will be able to

- Understand the growth concept, circadian rhythms and biological clock.
- Learn about the plant growth regulators and different tropic and Nastic movement of plant.
- Familiarize the term of Photoperiodism.
- Conceive the concept of seed dormancy and plant defense.
- Find relation between plant relation and biotechnology.
- Analyze the term plant tissue culture i.e. Micropropagation.
- Determine the term genetic engineering.
- Learn about DNA libraries.
- Understand the meaning of transgenic plants
- Determine the advantages and disadvantages of transgenic plants.
- Learn plant succession, different adaptations with suitable examples.
- Conceive the concept of environment pollution and their types, control and environment management.
- Evaluate the term natural resources.
- Find relation between principle and application of microscopy, electrophoresis, spectroscopy, chromatography etc.
- Understand the term utilization of plant with proper examples of food, oil, fiber, spices, beverages, medicinal and rubber plants.
- Conceive the concept of ethno botany.

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