

BOTANY COURSE OUTCOMES

B. Sc	Semester I	Credits: 4
Course: 1	Fundamentals of Microbes and Non-vascular Plants	Hrs/Wk: 4

Outcomes:

- On successful completion of this course, the students will be able to:
Explain origin of life on the earth.
- Illustrate diversity among the viruses and prokaryotic organisms and can categorize them.
- Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and life cycles.
- Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi.
- Recall and explain the evolutionary trends among amphibians of plant kingdom for their shift to land habitat.
- Evaluate the ecological and economic value of microbes, thallophytes and bryophytes

B. Sc	Semester II	Credits: 4
Course: 2	Basics of Vascular plants and Phytogeography	Hrs/Wk: 4

Outcomes:

- On successful completion of this course, the students will be able to:
- Classify and compare Pteridophytes and Gymnosperms based on their morphology, anatomy, reproduction and life cycles.
- Justify evolutionary trends in tracheophytes to adapt for land habitat.
- Explain the process of fossilization and compare the characteristics of extinct and extant plants.

- Critically understand various taxonomical aids for identification of Angiosperms.
- Analyze the morphology of the most common Angiosperm plants of their localities and recognize their families.
- Evaluate the ecological, ethnic and economic value of different tracheophytes and summarize their goods and services for human welfare.
- Locate different phytogeographical regions of the world and India and can analyze their floristic wealth.

B. Sc	Semester III	Credits: 4
Course: 3	Anatomy and Embryology of Angiosperms, Plant Ecology and Biodiversity	Hrs/Wk: 4

outcomes:

- On successful completion of this course, the students will be able to;
- Understand on the organization of tissues and tissue systems in plants.
- Illustrate and interpret various aspects of embryology.
- Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.
- Appraise various qualitative and quantitative parameters to study the population and community ecology.
- Correlate the importance of biodiversity and consequences due to its loss.
- Enlist the endemic/endangered flora and fauna

B. Sc	Semester IV	Credits: 4
Course: 4	Plant Physiology and Metabolism	Hrs/Wk: 4

outcomes:

- On successful completion of this course, the students will be able to; Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants.
- Evaluate the role of minerals in plant nutrition and their deficiency symptoms.
- Interpret the role of enzymes in plant metabolism.
- Critically understand the light reactions and carbon assimilation processes responsible for synthesis of food in plants.
- Analyze the biochemical reactions in relation to Nitrogen and lipid metabolisms.
- Evaluate the physiological factors that regulate growth and development in plants.
- Examine the role of light on flowering and explain physiology of plants under stress conditions

B. Sc	Semester IV	Credits: 4
Course: 5	Cell Biology, Genetics and Plant Breeding	Hrs/Wk: 4

outcomes:

- On successful completion of this course, the students will be able to: Distinguish prokaryotic and eukaryotic cells and design the model of a cell.
- Explain the organization of a eukaryotic chromosome and the structure of genetic material.
- Demonstrate techniques to observe the cell and its components under a microscope.

- Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings.
- Elucidate the role of extra-chromosomal genetic material for inheritance of characters.
- Evaluate the structure, function and regulation of genetic material.
- Understand the application of principles and modern techniques in plant breeding.
- Explain the procedures of selection and hybridization for improvement of crops.

B. Sc	Semester V	Credits: 4
Course: 6C	Plant Tissue Culture	Hrs/Wk: 4

Outcomes: Students at the successful completion of the course will be able to:

- Comprehend the basic knowledge and applications of plant tissue culture.
- Identify various facilities required to set up a plant tissue culture laboratory.
- Acquire a critical knowledge on sterilization techniques related to plant tissue culture.
- Demonstrate skills of callus culture through hands on experience. 5
- Understand the biotransformation technique for production of secondary metabolites

B. Sc	Semester V	Credits: 4
Course: 7C	Mushroom Cultivation	Hrs/Wk: 4

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- Students at the successful completion of the course will be able to:

- Understand the structure and life of a mushroom and discriminate edible and poisonous mushrooms.
- Identify the basic infrastructure to establish a mushroom culture unit.
- Demonstrate skills preparation of compost and spawn.
- Acquire a critical knowledge on cultivation of some edible mushrooms.
- Explain the methods of storage, preparation of value-added products and marketing.