

GENERIC ELECTIVE COURSE

COURSE- PLANT SCIENCE

Course Code: GEBO-01

Syllabus

- Microbes, Algae and Fungi: General characteristics and economic importance.
- Phycology and Bryology: General characteristics and economic importance.
- Pteridology and Gymnosperms: General characteristics, ecological and economic importance.
- Introduction to Angiosperm Taxonomy: Identification, classification, nomenclature, functions of herbarium, important herbaria and botanical gardens of the world and India.
- Plant Anatomy and Embryology: Types of tissues, structure of dicot and monocot root, stem and leaf, types of ovules, embryo sacs and endosperm; pollination, fertilization.
- Plant Ecology: Branches and scope of ecology, biotic and abiotic components, pollution.
- Plant Physiology and Biochemistry: Photosynthesis, respiration, nitrogen fixation, carbohydrates, proteins, lipids and Enzymology.
- Genetics and Plant Breeding: Mendelian genetics, crossing over and linkage; Aims, Objectives and Basics techniques of plant breeding and crop improvement.
- Cytology and Molecular Biology: Cell and its organelles, cell division, structure & composition of nucleic acid, Genetic code, protein synthesis, recombinant DNA technology and plant tissue culture.
- Biodiversity Conservation: Basic concepts of biodiversity, *In situ* and *Ex situ* conservation, Gene bank, NBPGR, International Union for Conservation of Nature (IUCN), Hotspots, Megabiodiversity countries and Endemism

Unit schedule

Unit-01- Microbes, Fungi and Lichens

Unit-02- Phycology and Bryology

Unit-03- Pteridology and Gymnosperms

Unit-04- Introduction to Angiosperm Taxonomy

Unit-05- Plant Anatomy and Embryology

Unit-06- Plant Ecology

Unit-07- Plant Physiology and Biochemistry

Unit-08- Genetics and Plant Breeding

Unit-09- Cytology and Molecular Biology

Unit-10- Biodiversity Conservation