

Lesson Plan: 1st August 2024 to 2025

Class B.Sc 1 year 1st sem.

Name of Assistant Professor: **Amit**

Subject:- Botany

Paper- Diversity of seed plants and cell Biology

Week	Topics
Week 1	Bacteria : Structure, nutrition, reproduction and economic importance; general account of cyanobacteria,
Week 2	Viruses: General account of Viruse including structure of TMV and Bacteriophages
Week 3	Algae: General characters, Introductory classification; economic importance; and life cycle (excluding development) of Nostoc (Cyanophyceae)
Week 4	Volvox, (Chlorophyceae), Vaucheria (Xanthophyceae), Ectocarpus (Phaeophyceae) and Polysiphonia (Rhodophyceae)
Week 5	Fungi: General characters, Introductory classification; economic importance; and life-history of Phytophthora (Mastigomycotina), Penicillium (Ascomycotina), Puccinia (Basidiomycotina), Colletotrichum (Deuteromycotina)
Week 6	General account of Lichens, types, ecological and economic importance. Bryophyta: Bryophytes: General characteristics, classification upto classes (Smith, 1935), alternation of generations,
Week 7	Structure and reproduction (excluding development) of Marchantia (Hepaticopsida), Anthoceros (Anthocerotopsida), Funaria (Bryopsida), ecological and economic importance of bryophytes
Week 8	Pteridophyta: General characters, classification upto classes (A.R. Smith, 2006), structure and reproduction (excluding development) of Rhynia (Psilopsida).
Week 9	Structure and reproduction (excluding development) of Selaginella (Lycopsida), Equisetum (Sphenopsida)
Week 10	Pteris (Pteropsida). heterospory and seed habit, stelar evolution; Ecological and economic importance.
Week 11	Gymnosperms: General characteristics, classification up to classes (Smith 1955), morphology, anatomy and reproduction of Cycas,
Week 12	Pinus, Ephedra (developmental details not to be included)
Week 13	Distribution and economic importance; General account of paleobotany and Geological time scale.
Week 14	Revision

Lesson Plan: 1st August. 2024 to 2025

Class B.Sc 2 year 3rd sem.

Name of Assistant Professor: **Amit**

Subject:- Botany

Paper- Plant Physiology

Week	Topics
Week 1	Plant water relations: absorption, water potential and transpiration.
Week 2	Role of micro and macro nutrients. Photosynthesis-1
Week 3	Photosynthesis-II, Respiration
Week 4	Biosynthesis, mechanism of action and uses of auxin, gibberellin, Cytokinin.
Week 5	abscisic acid, ethylene, Lipid metabolism
Week 6	Nitrogen metabolism
Week 7	Structure, function and mechanisms of action of phytochromes;
Week 8	Stomatal movement; Photoperiodism
Week 9	Biological clocks; Mechanism of flowering.
Week 10	Concepts of plant growth; factors affecting germination and dormancy of seeds
Week 11	Physiological and biochemical changes associated with senescence and abscission.
Week 12	Revision unit 1 and 2.
Week 13	Revision unit 3 and 4
Week 14	Tests and Exams

Lesson Plan: 1st August 2024 to 2025

Class B.Sc 3rd year 5th sem.

Name of Assistant Professor: **Amit**

Subject:- Botany

Paper- **BIOLOGY AND DIVERSITY OF SEED PLANTS-I & PLANT ANATOMY**

Week	Topics
Week 1	Plant-water Relations: Importance of water to plant life; physical properties of water; Imbibition, Diffusion, Osmosis and Plasmolysis; absorption and transport of water;
Week 2	transpiration-types, physiology of stomata, factors affecting transpiration, importance of transpiration. Test
Week 3	Mineral Nutrition: Essential macro and micro elements and their role; mineral uptake; deficiency symptoms.
Week 4	Transport of Organic Substances: Mechanism of phloem transport; source-sink relationship; factors affecting translocation
Week 5	Photosynthesis: Significance; historical aspects; photosynthetic pigments; action spectra and enhancement effects; concept of two photosystems; Z-scheme, photo-phosphorylation; Calvin cycle; C4 pathway; CAM plants; photorespiration
Week 6	Respiration: ATP—the biological energy currency; aerobic and anaerobic respiration; Krebs cycle; electron transport mechanism (chemi-osmotic theory); redox -potential; oxidative phosphorylation; pentose phosphate pathway, Test
Week 7	Seed dormancy; plant movements; the concept of photoperiodism; physiology of flowering; florigen concept; physiology of senescence; fruit ripening
Week 8	Ecology: Definition; scope and importance; levels of organization.
Week 9	Environment: Introduction; environmental factors- climatic (water, humidity, wind, light, temperature), edaphic (soil profile, physico-chemical properties), topographic and biotic factors (species interaction).
Week 10	Adaptations of plants to water stress and salinity (morphological and anatomical features of hydrophytes, xerophytes and halophytes). Population Ecology: Basic concept; characteristics; biotic potential, growth curves; ecotypes and ecads.
Week 11	Test, Community Ecology: Concepts; characteristics (qualitative and quantitative-analytical and synthetic); methods of analysis; ecological succession.
Week 12	Ecosystem: Structure (components) and functions (trophic levels, food chains, food webs, ecological pyramids and energy flow) Biogeochemical Cycles: carbon and nitrogen; hydrological (water) cycle
Week 13	Phyto-geography: Phyto-geographical regions of India; vegetation types of India (forests). Environmental Pollution: Sources, types and control of air and water pollution.
Week 14	Global Change: Greenhouse effect and greenhouse gases; impacts of global warming; carbon trading.
Week 15	Internal Exams, Test unit wise