

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Mr. Satparkash

Department: Botany

Subject/Course: (SEC-1)

Programme: Life Science I

Semester: Ist

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Syllabus not Available	

Name of the Teacher: Mr. Satparkash

Department: Botany

Subject/Course: Diversity of Microbes, Algae, Fungi and Archigoniates

Programme: B.Sc I - Life Science

Semester: I

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Bacteria: Structure, nutrition, reproduction and economic importance. Viruses: General account of Viruse including structure of TMV and Bacteriophages. Algae: General characters, Introductory classification; economic importance; and life cycle (excluding development) of Nostoc (Cyanophyceae). Volvox, (Chlorophyceae), Vaucheria (Xanthophyceae), Ectocarpus (Phaeophyceae) and Polysiphonia (Rhodophyceae). Fungi: General characters, Introductory classification; economic importance; and life-history of Phytophthora (Mastigomycotina), Penicillium (Ascomycotina), Puccinia (Basidiomycotina), Colletotrichum (Deuteromycotina).	22 July 2024- 22 August 2024
2.	General account of Lichens, types, ecological and economic importance. Bryophyta: Bryophytes: General characteristics, classification upto classes (Smith, 1935), alternation of generations, structure and reproduction (excluding development) of Marchantia (Hepaticopsida), Anthoceros (Anthocerotopsida), Funaria (Bryopsida), ecological and economic importance of bryophytes.	22 August 2024- 22 September 2024
3.	Pteridophyta: General characters, classification upto classes (A. R. Smith, 2006), structure and reproduction (excluding development) of Rhynia (Psilopsida): Structure and reproduction (excluding development) of Selaginella (Lycopsida), Equisetum (Sphenopsida) and Pteris (Pteropsida). Heterospory and seed habit, stelar evolution; Ecological and economic importance.	22 September 2024- 22 October 2024
4.	Gymnosperms: General characteristics, classification up to classes (Smith 1955), morphology, anatomy and reproduction of Cycas, Pinus, Ephedra (developmental details not to be included); Distribution and economic importance; General account of paleobotany and Geological time scale.	22 October 2024- 22 November 2024

Name of the Teacher: Mr. Satparkash

Department: Botany

Semester: III

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Plant water relations: absorption, water potential and transpiration; role of micro and macro nutrients. Photosynthesis, Respiration.	22 July 2024- 22 August 2024
2.	Biosynthesis, mechanism of action and uses of auxin, gibberellin, cytokinin, abscisic acid, ethylene, Lipid metabolism and Nitrogen metabolism	22 August 2024- 22 September 2024
3.	Structure, function and mechanisms of action of phytochromes; stomatal movement; photoperiodism and biological clocks; mechanism of flowering.	22 September 2024- 22 October 2024
4.	Concepts of plant growth; factors affecting germination and dormancy of seeds; physiological and biochemical changes associated with senescence and abscission	22 October 2024- 22 November 2024

Name of the Teacher: Dr. Savita

Department: Botany

Subject/Course: Ecology

Programme: B.Sc. Medical+Biotech III

Semester: V

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Ecology: Definition; scope and importance; levels of organization. Environmental factors- climatic factors, edaphic factors, topographic; and Biotic factors. Population Ecology: Basic concept; characteristics; biotic potential, growth curves; ecotypes and ecads.	22 July 2024- 22 August 2024
2.	Ecology: Concepts; characteristics (qualitative and quantitative-analytical and synthetic); methods of analysis; ecological succession.	22 August 2024- 22 September 2024
3.	Ecosystem: Structure and functions (trophic levels, food chains, food webs, ecological pyramids and energy flow). Phyto-geography: Phyto-geographical regions of India; vegetation types of India (forests). Environmental Pollution: Sources, types and control of air and water pollution.	22 September 2024- 22 October 2024
4.	Global Change: Greenhouse effect and greenhouse gases; impacts of global warming; carbon trading. Biodiversity: levels, types, significance, threats and conservation Revision, test, assignments etc.	22 October 2024- 22 November 2024

Name of the Teacher: Dr. Savita

Department: Botany

Subject/Course: Plant Physiology

Programme: B.Sc. Medical+Biotech III

Semester: V

Unit	Name of Topic/Contents	Tentative
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		<i>Dates/Days</i>
1.	Plant-water Relations: Importance of water to plant life; physical properties of water; Imbibition, Diffusion, Osmosis and Plasmolysis; absorption and transport of water; transpiration-types, physiology of stomata, factors affecting transpiration, importance of transpiration. Mineral Nutrition: Essential macro and micro elements and their role; mineral uptake; deficiency symptoms. Transport of Organic Substances: Mechanism of phloem transport; source-sink relationship; factors affecting translocation	22 July 2024- 22 August 2024
2.	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. 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. Seed dormancy; plant movements; the concept of photoperiodism; physiology of flowering; florigen concept; physiology of senescence; fruit ripening.	22 August 2024- 22 September 2024
3.	Introduction to Ecology: Definition; scope and importance; levels of organization. Environment: Introduction; environmental factors- climatic (water, humidity, wind, light, temperature), edaphic (soil profile, physico-chemical properties), topographic and biotic factors (species interaction). 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.	22 September 2024- 22 October 2024
4.	Community Ecology: Concepts; characteristics (qualitative and quantitative-analytical and synthetic); methods of analysis; ecological succession. Ecosystem: Structure (components) and functions (trophic levels, food chains, food webs, ecological pyramids and energy flow) Biogeochemical Cycles: carbon and nitrogen; hydrological (water) cycle. Phyto-geography: Phyto-geographical regions of India; vegetation types of India (forests). Environmental Pollution: Sources, types and control of air and water pollution. Global Change: Greenhouse effect and greenhouse gases; impacts of global warming; carbon trading.	22 October 2024- 22 November 2024