



Semester – 6th

Branch	Subject Title	Subject Code
B.Sc. (Botany-DSE2)	Ecology and forestry	BODSE2-161

Course Learning outcomes (CLO),

The course objective is to develop the skills related to plant ecology and forestry:

1. Observing the forested landscape
2. Analyzing data
3. Critiquing
4. Synthesizing
5. Communicating
6. Identification of forest types
7. Role and importance of forests in human life

Content

Unit – 1

Introductory Ecology

Definition, branches and importance

Interrelationships between Life and environment

Synecology: community types, analytical and synthetic characters of community,

Succession: types and process

Population ecology: Characters, dynamics, and ecological speciation

Ecotone, Ecads, Ecotype, Ecospecies, and Edge effect

Unit - 2

2. Ecological factor

Soil: Importance, origin, formation, composition, soil texture, soil profile, and components

Water: Distribution, precipitation types (Rain, fog, snow, hail, dew), hydrological cycle

Light: Types of radiation, variations and adaptations in the plants

Temperature: Types of plants according to temperature, variation and adaptations in the plants

Fire: variation and adaptation in the plants Biotic Factors

Unit – 3

Ecosystem

Ecosystem: Structure and components, Trophic level, Food chain and Food web

Energy flow: Concept and models, Productivity: Definition and types

Biotic interaction: Autotrophy, heterotrophy, symbiosis, commensalism, Parasitism, amensalism, predation proto-cooperation.

Ecological pyramids: Definition, concept, and types

Biogeochemical cycle: Carbon, nitrogen, sulfur, and phosphorus cycle

Unit - 4

Phytogeography - Continental drift, Endemism, Major terrestrial biomes: Forest, Grassland, Desert, Tai, and Tundra, Phytogeographical divisions of India, Forest types and vegetation of M. P. Grassland of M.P.



Unit - 5

5. Forestry - Definition, past and present distribution and status, Forest types and their Importance, De forestation- Causes and consequences, Afforestation practices, Social Forestry, Agroforestry. Forest factors: Biotic and Abiotic, Role of Remote sensing in forest management.

Practical's

1. Identification of locally available plant species and listing with botanical name, family, and uses
2. To determine soil and water pH and conductivity
3. Study of frequency, density, and abundance of vegetation
4. Soil testing (sulfate, carbonates, nitrates)
5. Determination of water holding capacity of different soil samples
6. Study of biotic interaction: Cuscuta (Stem Parasite), Orobanche (Root parasite) etc.
7. Field visit of pond, river, forest, and grassland ecosystem
8. Study of Xerophytic adaptation (Cactus, Nerium leaf etc.)
9. Study of hydrophytic adaptation (Hydrilla, Trapa etc.)
10. Minimum size of the Quadrate required for Vegetation
11. Minimum number of Quadrates required for study a vegetation
12. Maximum and Minimum Thermometer, Psychrometer



RAM KRISHNA DHARMARTH FOUNDATION UNIVERSITY, BHOPAL

Airport Bypass Road, Gandhi Nagar, Bhopal - 462033
