

**SOFT CORE
COURSES BSS
503APPLIEDEC
OLOGY**

39hrs

After successful completion of the course, students will be able to:

CO 1. Understand biodiversity, hotspots, conservation and management

CO 2. Develop knowledge of forest and landscape ecology and watershed management.

CO 3. Understand fisheries and aquaculture methods for commercial production of sea food

CO 4. Learn about the impacts of aquatic pollution.

CO 5. Develop in-depth knowledge in population ecology, prey-predatory dynamics, life-history strategies, energy budgets and reproductive strategies.

Unit I (13 hours)

Biodiversity: types, significance, distribution and measurements- Species richness: Simpson index, Shannon Wiener index, Evenness. Megadiversity countries, hot spots, biodiversity of Western Ghats and Eastern Himalayas. Wildlife management: Present status of threatened

wildlife of Western Ghats; Conservation, Administrative and Judicial measures. Forest and landscape ecology: types of forests and their distribution with reference to Western Ghats; Vegetation mapping; Plant-animal interactions; Integrated pest management. Landscape Ecology –watersheds management.

Unit II (13 hours)

Fisheries: Aquatic resources - fish, mollusca and crustaceans. Aquatic wildlife; Conservation and management of aquatic wildlife. Aquaculture - prawns, seaweeds, oysters, mussels, fin fishes and the environment. Aquaponics. Aquatic pollution – Eutrophication, algal blooms, coral reefs – bleaching, shellfish poisoning. Ganga action plan

Unit III (13 hours)

Population ecology: Demography-life tables; population structure-recruitment patterns, settlement and migration; population growth-growth patterns, age and growth, allometry, growth parameters; biotic parameters-predation, prey-predatory dynamics, competition, mutualism and population regulation; life history strategies-life history traits, longevity and survival rates, energy budgets, and reproductive strategies, *k*-selection and *r*-selection.