BSS454 AQUATIC BIOLOGY

Course Outcomes:

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

CO 1. Gain theoretical knowledge in hydrobiology, abiotic factors and aquatic organisms.

CO 2. Know how aquatic organisms adapted during the course of evolution.

CO 3. Comprehend the importance of estuaries, mangroves, marshes, tidal flats, coastal wetlands and coral reef community.

CO 4. Realize the impacts of aquatic pollution and how to use the biological strategies to prevent the pollution.

CO 5. Know the basic concepts of biological productivity of both flora and fauna.

CO 6. Gain the knowledge how to collect, separate and classify planktons, and their importance.

CO 7. Appreciate the economic importance of hydrophytes and halophytes.

UNIT I (13 hrs)

Hydrobiology: Properties of water including sea water. Hydrological cycle. Ocean water movement - El nino effects. Structural and functional adaptations of aquatic organisms to the abiotic factors such as temperature, light, salinity, pressure and dissolved oxygen.

UNIT II (13 hrs)

Aquatic ecosystems: Freshwater habitats - wetland and swamps, tank/pond, river, lake/reservoir. Physico-chemical conditions and biological composition of estuaries, mangroves/marshes, tidal flats and coastal wetlands. Marine habitats - types of sea shore environmental parameters and adaptations of pelagic, benthic and deep sea organisms. Coral reef community. Aquatic pollution: characteristics, sources and types; eutrophication, red tide, shellfish poisoning; Biological control of aquatic pollution.

UNIT III (13 hrs)

Biological productivity: Basic concepts. Factors affecting productivity, measurement of productivity: Leibig's law of minimum, Shelford's law of tolerance. Production and distribution of aquatic fauna; Planktonology-classification, distribution, collection and separation of plankton; blooms/ swarms of plankton and algal production. Hydrophytes - types, adaptations, distributions and economic importance. Halophytes - types, adaptations, economic importance. Sea weed -types and their distribution and economic importance.