

# **Fisheries Science**

## **DEGREE STANDARD**

### **BIOLOGY AND CULTURE OF FINFISH AND SHELLFISH**

#### **UNIT I**

Systematics - Binomial nomenclature: classification of elasmobranchs, teleosts, crustaceans, and molluscs; external morphology - morphometrics-meristics and anatomy of finfish and shellfish.

#### **UNIT II**

Food and feeding habits -length-weight relationships -age and growth -reproductive strategies - breeding -mstrution and spawning-fecundity and development biology of commercialaly important finfish and shellfish -psysiology -respiration, circulation,digestion, excretion, osmoregulation,endocrine giands and reproduction.

#### **UNIT III**

Commercially important fisheries of the world, India and Tamilnadu; population dynamics-growth and mortality parameters and their evalution -objectives and methods of stock assessment, fish production in India and Tamilnadu -conservation-exploitation.

#### **UNIT IV**

Selection of suitable sites -fish farm construction composite fish culture -ornamental fish culture-integrated fish farming-sewage-fed fish culture.

#### **UNIT V**

Shrimp culture - culture techniques of bivalves-cages and pens- shrimp feed formulation-shrimp batchery and nurseery rearing.

#### **UNIT VI**

Fish genetics -hybridization-finfish and shellfish disease, parasites and remedial measures.

#### **UNIT VII**

Ornamental fishes- aquarium keeping-feed formulation and feeding techniques -water quality maintenance-breeding techniques.

#### **UNIT VIII**

Physio-chemical characteristics of fresh water bodies-flora and fauna -marine zones-chemistry of seawater-adaptations of intertidal animals, -waves, tides, currents -phytoplankton and zooplankton standing crop and distribution.

#### **UNIT IX**

Estimation of primary production -aquatic pollution-mangroves, their distribution and uses -food chain in aquatic environment.

#### **UNIT X**

Economics of fishing, fish farming and fish marketing-primary and secondary data for statistical analysis for reporting-extension teaching methods and use of audiovisual aids in extension activities.

### **PAPER II**

#### **UNIT I**

Traditional crafts - motorisation of traditional crafts - mechanised boats-materials used in the construction of crafts-care and maintenance of vessels.

#### **UNIT II**

Types of fishing gears -fishing gear materials -fabrication maintenance and preservation of fishing gears.

## **Fisheries Science**

### UNIT III

Principles of navigation and seamanship -chart reading and fixing positions-regulations of fishing vessels -life saving devices.

### UNIT IV

Types of diesel engines and their working principles -outboard engines-types and functions -operation and maintenance of various processing equipments.

UNIT V:- Freshness of fish and rigor mortis-mechanisms of fish spoilage-fish drying methods-principles of salting and salt curing methods-smoking of fishes.

### UNIT VI

Canning materials-canning media-methods of canning -quality of canned fishery products.

UNIT VII:- Fish preservation by chilling and icing-preparation of ice -chemicals used in freezing-types of freezing -thawing.

### UNIT VIII

Microbiological and biochemical changes in freezing -packaging and transport of frozen fishery products - freeze drying.

### UNIT IX

Fishery byproducts -microbiological criteria for processed seafoods-nutritive values of processed seafoods.

### UNIT X

Quality control, factors determining quality, assessment of quality-hygiene, sanitation and standards.