| Course Code | Course Name | Credits |
|---|---|---|
| 26ZY508 | FISHERIES SCIENCE | 04 |

**Course Objectives**

- To understand the fundamental concepts and scope of fisheries science.
- To explain the biology, culture, and management of economically important fishes.
- To develop knowledge on aquaculture techniques, fish breeding, and fish nutrition.
- To analyze fishery resources, conservation methods, and sustainable fish production.
- To enhance practical and analytical skills related to fisheries and aquaculture management.

**Learning Outcomes**

- Explain the basic principles and applications of fisheries science.
- Differentiate various fish species based on morphology, habitat, and economic importance.
- Examine aquaculture practices, fish breeding, and fish nutrition techniques.
- Analyze fishery resource management and conservation strategies.
- Apply scientific knowledge and practical skills in fisheries and aquaculture sectors.

**Unit 1 – Construction of aquafarms (12 Hrs.)**

Pre-stocking, Pond management – Aquatic weeds, insects and their control. Farm Management - Nursery, rearing and stocking ponds. Reservoir fisheries and their management. Inland fisheries; Marine fisheries; Environmental factors influencing the seasonal variation in fish; Fishing crafts and Gears; Depletion of Fisheries resources.

**Unit 2 – Seed Production Technology (12 Hrs.)**

Fish and prawn seed resources in India. Collection of seeds from natural resources and transportation of seeds. Advanced techniques in seed production - Induced breeding methods in fishes and prawns. Bundh breeding, brood stock management. Hatcheries – Types, construction and management of hatcheries.

**Unit 3 - Cultures and Integrated Farming (12 Hrs.)**

Composite fish culture; Sewage-fed, cage and pen cultures. Air-breathing and ornamental fish culture. Integrated fish cum agriculture – Paddy, Horticulture and Azolla. Integrated fish cum livestock – Poultry, Piggery and Dairy. Utilization of renewable energy resources and bio-gas slurry in aquaculture.

**Unit 4 – Feed and Health Management (12 Hrs.)**

Feed management – Feeding habits of cultivable fishes; nutritional requirements, supplementary feeding. Live feed – Fish food organisms, culture of plankton; significance of plankton in aquaculture. Diseases caused by ectoparasite and endoparasites: protozoan, helminth, bacterial, fungal, viral parasites, their symptoms. Treatments and prophylaxis.

**Unit 5 - Sustainable aquaculture (12 Hrs.)**

Sustainable aquaculture, extensive, semi-intensive and intensive culture of fish, pen culture, cage culture, composite fish culture. Role of water quality in aquaculture; Exotic fishes, history of transportation of important exotic fishes in India. Larvivorous fishes, exotic and indigenous species with special reference to malarial control. Processing of harvested fish, Fishery byproducts.

**Reference Books:**


1. S.S. Khanna and H.R. Singh (2014) A textbook of fish biology and fisheries, Narendra Publishing House, 3rd edition.
2. Michael King (2007). Fisheries Biology, Assessment and Management. Blackwell Publishing.
3. Robert R. Stickney (2009). Aquaculture: An Introductory Text. CABI Publishing.
4. V.G. Jhingran (1991). Fish and Fisheries of India. Hindustan Publishing Corporation.
5. S.S. Khanna and H.R. Singh (2003). A Textbook of Fish Biology and Fisheries. Narendra Publishing House.

https://www.fao.org/fisheries/en
https://www.biologydiscussion.com/fisheries
https://www.easybiologyclass.com/category/fisheries/