

**ELECTIVE COURSE 7 – FISHERY BIOLOGY**

**Unit I**

World and Indian Fisheries – Prospects and Problems – Plans, Policies and Current Status of Indian Fisheries.

**Unit II**

Marine fisheries ; Sardines, Mackerels, Bombay duck, Sciaenids, Ribbonfish, Silver bellies, Pomfrets, Carangids, Sharks, Shrimps, Prawns, Crabs Lobsters, Oysters, Molluscs ; Mussels, Clams and Scallops.

**Unit III**

Inland fisheries ; Freshwater – riverine, reservoir, pond and cold water fisheries – Spawning and breeding habits of fishes.

Estuarine and brackish water fisheries and their economics

Fish Gears and Crafts used in South Indian Fisheries.

Ornamental fish culture and economics.

**Unit IV**

Assessment of fish stocks : Marking and recapture method, area sampling method, biostatistical method, egg count method, hydroacoustic method, remote sensing.

Age and Growth : Scale method, otolith method, other skeletal parts as age indicators, length – frequency method, length – weight relationship and condition factor.

Population studies : estimation of population size, marking, tagging, population dynamics, population models.

**Unit V**

Culture fisheries : Integrated fish farming technology – rice – cum – brackish water fisheries, rice-cum-common carp culture, fish –cum-duck culture, Sewage – fed fisheries – monosex culture – polyculture.

Fish endocrinology – Induced breeding – techniques – examples.

Fish Processing and Preservation – fish by – products – brief account on transport and marketing. Effect of pollution of fisheries.

Fish Pathology : Parasites – Protozoan, fungal, bacterial, worms and arthropods.

**Recommended Text Books :**

1. BISWAS, S.P., (1993) Manual of Methods in Fish Biology, International Book Co., Absecon Highlands, New Jersey.
2. JHINGRAN, V.G., (1991) Fish and Fisheries of India. Hindustan Publishing Copr., New Delhi.
3. PILLAI, T.V.R. (1993) Aquaculture : Principles and Practices. Fishing News Agency, London.

**Reference Books :**

1. BOSE, A.N., YANG, C.T., and MISRA, A. (1991) Coastal Aquaculture Engineering. Oxford and IBH Publishing Co., Pvt. Ltd., New Delhi.
2. CHAKRABARTI, N.M., (1994) Diseases of Cultivable Freshwater Fishes and Their Control. International Books and Periodicals Supply service, New Delhi.
3. DAY, F., (1986) The Fishes of India, Vols., I & II. Today and Tomorrow's Book Agency, New Delhi.
4. GOVINDAN, T.K. (1992) Fish processing Technology, Oxford and IBH Publishing Co., Pvt. Ltd., New Delhi.
5. MPEDA Hand book of Aquafarming (1992) Freshwater Fishes, Marine Products Export Development Agency, Kochi.
6. NEW, M.B., TACON., A.G.J., and CSAVAS., I. (1993) Farm – made – Aqua feeds. Food and Agriculture Organization of United nations, Rome.
7. SANTHANAM, R., (1990) Fisheries Science, Daya Publishing House, New Delhi.
8. SEGHAL, K.K. (1992) Recent Researches in Cold Water Fisheries, Today and Tomorrow's Publishers and Printers, New Delhi.
9. SINHA, V.R.P. (1993) A Compendium of Aquaculture Technologies for Developing Countries. Center for Science and Technology and Oxford and IBH Publishing Co., Pvt., Ltd., New Delhi.
10. SUBBHA RAO (1986) Economics of Fisheries, Daya Publishing House, New Delhi.
11. TRIVEDI, K.K. (1986) Fisheries Development : 2000 A.D. Association of Indian Fishery Industries and Oxford and IBH Publishing Co., Pvt. Ltd., New Delhi.
12. UMA SHARMA., AND GROVER, S.P., (1982), An Introduction to Indian Fisheries, Bishen Singh Mahendra Pal Singh, Dehra Dun.