



BACHELOR OF ARTS (B.A.)

(THREE YEAR DEGREE COURSE)

SUBJECT

FISHERIES

B.A. (FISHERIES)

COURSE STRUCTURE

FIRST YEAR

PAPER – 101: Fish Morphology: Introduction of Fish, Fish Structure, Characteristics of Fish 35 MARKS

PAPER – 102: Fish Taxonomy 35 MARKS

PAPER – 103: PRACTICAL (Based on Paper 101, 102) 30 MARKS

SECOND YEAR

PAPER – 201: Fish Ecology (Limnology) 35 MARKS

PAPER – 202: Fish Culture 35 MARKS

PAPER – 203: PRACTICAL (Based on Paper 201, 202) 30 MARKS

THIRD YEAR

PAPER – 301: Capture Fishery 35 MARKS

PAPER – 302: Administration of Fisheries Development 35 MARKS

PAPER – 303: PRACTICAL (Based on Paper 301, 302) 30 MARKS

B.A. (FISHERIES)

FIRST YEAR DETAILED SYLLBUS

PAPER – 101

Fish Morphology :

Introduction Fish, Fish Structure,. Characteristics of Fish

- Unit – I The Skin and scales – Colouration :
- Skin Structure and function
- Scales Different types of scales, modifications and variations.
- Colouration Sources, Control and significance of colouration.
- Unit – II Fins, Locomotion and Migration :
- Fins Types of fins, origin and function
- Locomotion Different methods of locomotion.
- Migration Types of migration, Advantages and factors influencing migration.
- Unit – III Food and Alimentary Canal: Feeding Habits, Seasonal fluctuation of food elementary canal and its modifications in different species, digestive glands and Digestion.
- Unit – IV Respiration and Accessory Respiratory organs Structure of Gill, Mechanism of Respiration, Various Respiratory organs and their significance.
- Unit – V Reproduction and Development : Male Reproductive organs, Female Reproductive organs, Seasonal cycle, Sex Dimorphism Courtship and Parental Care.

Reference Books :-

- 1- Fish and Fisheries, By Dr. S.D. Kulshrestha.
ABD, Publishers Jaipur (Hindi Medium)

- 2- An Introduction to fishes. By S.S. Sharma.

- 3- Introduction to Fishes. By H.S. Bhamrah, Kavita Junaeja,
Anmol Publication, New Delhi.

B.A. (FISHERIES)
FIRST YEAR DETAILED SYALLBUS

PAPER – 102

Fish Taxonomy

- Unit – I General Characters and classification of fishes.
- Unit – II Agantha – Ostracoderms and cyclostomes.
- Unit – III Gnathostomata – The Placoderms.
- Unit – IV Elasmobranchi, Holocephali and Diponi
- Unit – V Teleostomi – crossopterygei and Actionpterygei.

Reference Books :-

- 1- Fish and Fisheries, By Dr. S.D. Kulshrestha.
 ABD, Publishers Jaipur (Hindi Medium)
- 2- An Introduction to fishes. By S.S. Sharma.
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PAPER – 103

Practical

External morphology of fishes, sexual dimorphism of fishers. Dissection of fish to show internal organs, Histological slides on fishes, study of developmental stages of fish.

B.A. (FISHERIES)

SECOND YEAR DETAILED SYALLBUS

PAPER – 201

Fish Ecology (Limnology)

- Unit – I Meaning of Ecology, Abiotic factors. Physical factors affecting fish culture, Role of depth of the pond in fish culture, Role of temperature in fish culture, Role of turbidity in fish culture, Role of light in fish culture, Role of light/ solar energy affecting all factors.
- Unit – II Chemical Properties of Pond, Chemical factors affecting fish culture, Dissolved oxygen, Dissolved Carbon Dioxide, PH, Inorganic salts and Nutrients.
- Unit – III Biological Properties of Pond, Biological factors affecting fish culture plant and animal communities.
- Unit – IV Planktons and Nektons: Definition, Phytoplankton, Zooplanktons, Algal Blooms, Swarms, Role of plankton in fish culture.
- Unit – V Merits and Demerits of occurrence of weeds. Definition of weeds, Weed eradication management.

Reference – Books

- 1- Principals of Environmental Biology By P.K.G. Nair Himalyan Publishing House, Bombay.

- 2- Chemical analysis of Fish Pond soil and water By G.N. Chattopadhyay, Daya Publishing House Delhi.
- 3- Introduction of Planktonology By Krishna Pillai. Himalayan Publishing House Bombay.
- 4- मछली पालन के नये आयाम By A.K. Singh. Daya Publishing House. Delhi.
- 5- An Introduction to Indian Fisheries, By Uma Sharma & S.P. Grover Published by Bisha Singh Mahendra Pal Singh Dehara Dun.

B.A. (FISHERIES)

SECOND YEAR DETAILED SYALLBUS

PAPER – 202

Fish Culture

- Unit – I Concept of Fish Culture : Pond, Types of Ponds, Hatching Ponds, Nursery Ponds, Rearing Ponds, Stocking Ponds, Pre harvest and post harvest pond management, Ideal Fish farm.
- Unit – II Culturable fishes of India (Major carps), Inland fish culture, Indigenous fishes, Criterion of fish selection for fish culture.
- Unit – III Fish culture in Paddy fields and man made lakes.
- Unit – IV Sewage fed Fisheries, Fishes and their culture, Exotic and transplanted Fishes, Sport fishes, Food fishes, Larvicidal fishes and human health.
- Unit – V Composite fish culture, integrated fish culture, Fish cum Duck culture, Fish cum Pig culture, Fish cum poultry culture.

Reference – Books

- (i) Principals of Environmental Biology By P.K.G. Nair Himalyan Publishing House, Bombay.
- (ii) Chemical analysis of Fish Pond soil and water By G.N. Chattopadhyay, Daya Publishing House Delhi.

- (iii) Introduction of Planktonology By Krishna Pillai. Himalayan Publishing House
Bombay.
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B.A. (FISHERIES)
SECOND YEAR DETAILED SYALLBUS

PAPER – 203

PRACTICAL

Identification of local fishes, Physio - chemical analysis of pond water, Plankton study, Aquatic Plants study.

B.A. (FISHERIES)

THIRD YEAR DETAILED SYALLBUS

PAPER – 301

Capture Fishery

- Unit – I Concepts of Capture Fisheries: Capture Fisheries resources of India, Marine resources, Riverine resources
- Unit – II Methods of Fishing and Fishing gears : History of Fish Capturing, Fishing without gear, Wounding gear, stratifying methods, Fish Screens, Fish Trap, Line Fishing, Electrical Fishing, Boat Fishing, Line Fishing, Electrical Fishing, Nets preservation and safety.
- Unit – III Preparation and maintenance of Aquarium, Concept of Aquarium, Benefits of Aquarium, Aquarium Industry, Aquarium and health.
- Unit – IV Fish preservation and Processing: Introduction, Principles of fish preservation, Methods of processing, Fish by-products.
- Unit – V Fish diseases : Common disease of fish and their cure, Bacterial and Viral disease, Fungal disease, Disease caused by Protozons, Worms etc..

Reference – Books

- 1- Role of Fisheries in rural development.
By. S. Girriappa, Daya Publishing House, Delhi.

- 2- Aquaculture management. By James W. Meade
An AVI Book Published by Vonnostrunel Reinhold New York.

- 3- Fish and Fisheries Part II, By. S.D. Kulshrestha
Hindi Medium. ABD Publishing House Jaipur.
- 4- मछली पालन कैसे करें By A.K. Singh, Smita Sweta, Ragni Gupta. Daya Publishing House. Delhi.

B.A. (FISHERIES)
THIRD YEAR DETAILED SYALLBUS

PAPER – 302

Administration of Fisheries Development

- Unit – I Meaning, definition of administration of fisheries, importance of fisheries administration, role of administration in fisheries development. Role and Concept of Fisheries Research and Education and Training, Various Research Educational Training Centers/Institutes of India. Problems and Prospects.
- Unit – II Role of Fisheries in rural development of India, Govt. Schemes for rural development, Different fish resources of India.
- (a) Production resources
- (b) Capture resources.
- Unit – III Planning and Management: Top, Middle, Supervisory and Workers Management.
- Unit – IV Fish Marketing: Definition, Importance, Concept of demand and supply, Role of transport in marketing, Role of store facilities, role of Co-operative Marketing, Problems and solutions of Marketing.

Unit – V Socio-economics of fisheries, Status of Fishermen Community, Problems of the Community, Govt. Role and schemes to develop Fishermen Community, Economic problems, Educational Problems and health care, Fisheries Estates, Fishery co-operatives.

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B.A. (FISHERIES)
THIRD YEAR DETAILED SYALLBUS

PAPER – 303

PRACTICAL

- Fisheries Project formulation, Seed Production Project, Fish Farm Project.
- Aquarium formation projects, record keeping of fish farm layout of different type of fish ponds.