GOVT. DIGVIJAY AUTO. P.G. COLLEGE RAJNANDGAON (C.G.)

Department of Zoology

B.Sc. FYUG/LOCF Pattern

B.Sc. Industrial Fish & Fisheries
Semester Pattern
V & VI Semester
2025 – 26

Syllabus for B.Sc. Industrial Fish & Fisheries Undergraduate Program

(Approved by Board of Studies)

Effective from July 2025-26

As Per provisions of NEP 2020 to be implemented from academic year 2022-23

GOVT. DIGVIJAY AUTONOMOUS PG COLLEGE, RAJNANDGAON(C.G.)
Department of Zoology

FYUGP (CBES/LOCF Pattern)
B.Sc. Industrial Fish & Fisheries I to VIII SEM
Session 2025-26

Sem	Course	Course Name	Credit	Credits (L+P)	Internal Marks	ESE Max Marks	M.M.
V	DSC- V	Fish Pathology & Post harvest Technology	3	3+0	20	80	100
		Lab Course	1	0+1	-	-	50
VI	DSC –VI	Construction & Management of Aquarium	3	3+0	20	80	100
		Lab Course	1	0+1	-	-	50
			24	24	120	480	900

GOVT. DIGVIJAY AUTONOMOUS PG COLLEGE RAJNADGAON (C.G.)

FYUGP (CBCS and LOCF Pattern)

Department of Zoology

Session: 2024-25	**Program: B.Sc.**
Semester: V	**Subject: Industrial Fish & Fisheries**
Course type: DSC- V	**Course Code:**
Course Title : Fish Pathology & Post harvest Technology	
Credit: 04 (03+01)	**Lecture – 60 (45+15)**
MM: 100 = (ESE 80+IA 20)	**Minimum Passing Marks: 40%**

Title	**Fish Pathology & Post harvest Technology**
Course Learning Outcome:	• Understand the Fish pathology and its cure. • Acquire knowledge of different fish parasites affecting fish culture. • Creating Awareness on Seaweed culture. • Knowledge on Post harvest technology.
Program Specific Outcome:	• Student gain knowledge about Fish pathology. • Student gain knowledge of post harvest technology. • Student gain knowledge of Fish preservation technology.

Unit	Lectures	Topics	Credits
I	10	1. Fish Disease, its Type and affected Organs. 2. Morphology, Biology, Diagnosis, Prophylaxis and Treatment of disease caused by 1. Viral disease 2. Bacterial disease. 3. Fungal disease 4. Protozoan disease	0.75
II	10	1. Epizootic Ulcerative syndrome or EUS Diseases. 2. Worm parasites 3. Crustacean Parasites 4. Miscellaneous disease a) Stress b) Gas bubble disease c) Yolk coagulation disease. (White spot disease) d) Malformation & Tumors. e) Nutritional and intrinsic causes	0.75
III	10	**(Post Harvest technology)** 1. Biochemical Composition of Fish 2. Cause of Decomposition of fishes. 3. Handing, preservation and transportation of fresh fish. 4. Quality control and factory sanitation.	0.75
IV	15	**Fish Preservation Techniques** 1. Salt curing and drying of Fish. 2. Freezing preservation of Fish. 3. Canning preservation of Fish. 4. Modern techniques in Fish preservation. 5. Fish by product – Fish meal, Fish oil, Fish protein etc.	0.75

Lab course	15	1. Identification of fish diseases/pathogen/parasites. 2. External & Internal examination of diseased finfish and shellfish. 3. Collection and Preservation of Diseased Fish. 4. Antibiotic sensitivity. 5. Staining methods of Preparation and sterilization of microbial media. Microorganisms. 6. Study of normal histopathology of gills, skins kidney, spleen, liver and related histopathology. 7. Preparation of stained blood film to study various types of blood cells of fishes. 8. Qualitative tests of functional groups in carbohydrates, proteins and lipids. 9. Paper chromatography of essential amino acids. 10. Quantitative estimation of water soluble protein following Lowry' Methods. 11. Enumeration of specific spoilage microbes from fish and fishery products. 12. Field visits to Fish feed production units of nearby. 13. Visit to fisheries co-operative society/ Fish market and make a survey report on post harvest traditional techniques. 14. Fish market survey – Detailed report on fish spoilage in local fish market. 15. Extension work – preparation of charts, posters, flashcards displaying different aspects of Fish pathology & post harvest technology. 16. Study of socio-economic status of fish farmer.	01
Recommended Books		• Srivastava, C.B.L (2006) A textbook of fishery science and Indian fisheries • Balachandran, K.K. (2002) Post Harvest Technology of Fish and Fish Products. • Jhingran, V.K. 1984 "Fish and Fisheries of India" • Parihar, R.K, 1994 "Fish Biology and Indian Fisheries"	

Evaluation Scheme

Evaluation Scheme	Sections in Question Paper	Question type	Word Limit	No. of Questions	Marks per Question	Total
External	A	Very Short answer type	50	8	2	16
	B	Short answer type	100	4	6	24
	C	Long answer type	200	4	10	40
Internal	**Based on CT & Assignment/Project**					20
	Total =					50

Evaluation Scheme of Practical

Practical	Experiment 01	12
	Experiment 02	08
	Experiment 03	04
	Spotting	16
	Viva	05
	Sessional	05
Total -		**50**

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GOVT. DIGVIJAY AUTONOMOUS PG COLLEGE RAJNADGAON (C.G.)

FYUGP (CBCS and LOCF Pattern)

Department of Zoology

Session: 2024-25	**Program: B.Sc.**
Semester: VI	**Subject: Industrial Fish & Fisheries**
Course type: DSC- VI	**Course Code:**
Course Title : Construction & Management of Aquarium	
Credit: 04 (03+01)	**Lecture – 60 (45+15)**
MM: 100 = (ESE 80+IA 20)	**Minimum Passing Marks: 40%**

Title	**Construction & Management of Aquarium**
Course Learning Outcome:	Student learns the Construction of Glass Aquarium, Ornamental fisheries, Décor, Setting of aquarium and its management.
Program Specific Outcome:	Student can construct glass aquarium and breed commercially important aquarium fish. after studies student can start their own cottage industry of aquarium.

Unit	Lectures	Topics	Credits
I	10	**Unit - I** • Introduction – Aquarium Fish keeping and role of aquarists. • Water and its management, N Cycle in the aquarium, Mulm and artificial light. • Aeration and its structure. • Filtration – Structure and different type of filters.	0.75
II	10	**Unit – II Fish keeping** • Setting of fresh water aquarium, post setting steps. • Construction of all glass aquarium tank bedding material for aquarium • Transporting and stocking of fresh water aquarium. • Tools and accessories used in aqua	0.75
III	10	**UNIT - III** • Decor. • Food, feed and feeding. • Breeding –Breeding tank, breeding habit. • Fish health and hygiene – stress and Alignment.	0.75
IV	15	**UNIT- IV** • Common aquarium plants, Morphology. • Marine aquaria and its management. • Marine ornamental Fishes • Fresh water ornamental Fishes. • Other ornamental organism – Sea - Anemone, Octopus, Star-fish etc.	0.75
Lab course	15	1. Glass cutting with the help of glass cutter. 2. Construction & Setting of Freshwater Glass aquarium of suitable size.(Maintained by students can be evaluated after one month) 3. Identification of aquarium plants. (10 species) 4. Study of live food organisms. 5. Water quality management in freshwater and marine aquariums 6. Morphological Study of Fresh water Ornamental fishes (Exotic-Goldfish, Angel, Tiger barb, Sword tail, Fighter fish, Oscar.	01

		Indigenous- Dwarf Gourami, Indian glass fish, Zebra Danio, Y loach, Peacock eel, Rosy barb) 7. Morphological Study of ornamental organisms. a. Sea anemone b. Lobster c. Shrimp d. Star fish e. Corals 8. Identification, Design and working Aquarium accessories and equipments : a. Aerator b. Filter c. Heater and thermostat d. Hand net e. decors f. feeding equipments g. pumps h. lights 9. Breeding of egg layers(Gotd fish), live bearers (Guppy) and bubble nest builder (Gourami). 10. Omamental fish diseases and their diagnosis and treatment. Calculation of medicine/chemical treatment dosages. 11. Conditioning and packing of omamental fishes. 12. Visit to Aquarium cum Awareness centre. (Project). 13. Identification of aquarium Egg layers &Live Bearers fishes (any eight).	
Recommended Books		• Zaidi, S.G.S (2002) Ornamental fish culture • Mahapatra, B.K., Dutta S., Pailan, G.H.(2015) Ornamental Fish Breeding, Culture and Trade • Ahilan, B., Felix, N., Santham, R., (2008) A text book of Aquariculture • Dholakia A.D. (2010)Ornamental Fish culture and Aquarium Management • Srivastava, C.B.L (2006) A textbook of fishery science and Indian fisheries. • Mahapatra, B.K., Dutta S., Pailan, G.H.(2015) Ornamental Fish Breeding, Culture andTrade.	

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