



**GUJARAT TECHNOLOGICAL UNIVERSITY**

**Integrated Master of Science (Biotechnology)**

**Semester: 7**

**Subject Name: Ornamental Fishes and Aquarium Maintenance**

**Subject Code: 1370415**

**Prerequisite:**

Basic knowledge of fish biology, aquaculture, and water quality management is required. Understanding fish physiology, nutrition, and ecosystem balance will help students explore ornamental fish breeding, aquarium setup, maintenance techniques, and disease management for sustainable ornamental fisheries and the aquarium industry.

**Rationale:**

This course focuses on ornamental fish diversity, breeding, and aquarium management. It equips students with skills in tank design, water quality control, disease prevention, and trade practices, promoting sustainable ornamental aquaculture and entrepreneurship in the aquarium industry.

**Course Scheme :**

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
L	T	PR		Theory		Practical		
			ESE (E)	PA(M)	ESE (V)	PA (I)		
0	0	4	2	0	0	0	50	50

**Course Content:**

Unit No.	Content	No. of Hours	Weightage (%)
1	Ornamental Fishes of India- Feshwater and marine. Status of Indian ornamental fish sector- Export potential. Ornamental fish as livelihood sector-employment identification of potential ornamental fishes. Benefits of keeping aquarium fishes.	12	20
2	Construction of home aquarium-accessories, design and setting up of freshwater and marine aquarium. Principles of a balanced aquarium. Aquarium plants and their role.	12	20
3	Water quality maintenance in aquarium- range of water quality parameters. Filters in aquarium- types and principles.	12	20
4	Nutritional requirements for aquarium fishes, types of aquarium fish food – artificial and live feed. Common diseases of aquarium fishes and their control.	12	20
5	Breeding techniques for major aquarium fishes- Feshwater and marine. Maintenance of broodstock. Nursery management. Conditioning, packaging and transport of aquarium fishes. Quarantine methods.	12	20
<b>Total Hours:</b>		60	100



**GUJARAT TECHNOLOGICAL UNIVERSITY**

**Integrated Master of Science (Biotechnology)**

**Semester: 7**

**Subject Name: Ornamental Fishes and Aquarium Maintenance**

**Subject Code: 1370415**

**Textbook:**

1. Ornamental Fish Culture and Aquarium Management – Anshuman D. Dholakia (2016).

**Reference Books:**

1. Ultimate Encyclopedia of Aquarium Fish & Fish Care – Mary Bailey & Gina Sandford (2015).

**Course Outcomes:**

No.	Course Outcomes	RBT Level*
1	Describe the classification, biology, and habitat requirements of ornamental fish species.	RM, UN
2	Explain aquarium setup, water quality management, and essential maintenance techniques.	UN, AP
3	Analyze ornamental fish breeding techniques, nutrition, and disease management strategies.	AN, EL
4	Evaluate the sustainability, trade practices, and economic potential of the ornamental fish industry.	EL, CR
5	Apply innovative approaches in aquarium design, breeding programs, and eco-friendly maintenance systems.	AP, CR

\*RM: Remember, UN: Understand, AP: Apply, AN: Analyze, EL: Evaluate, CR: Create

\*\*\*\*\*