

## AQUACULTURE AND FARM MANAGEMENT

Semester	Subject Code	Category	Lecture		Theory		Practical	Credits
			Hrs/ week	Total Hours/ Semester	Hrs/ week	Total Hours/ Semester		
I	21CPZO1D	Elective-I	3	45	3	45	Nil	3

### COURSE OBJECTIVES

- The objective of the paper is to understand the culture practices of both fin fish and shell fishes in India and World. This paper is planned to teach in the lines of knowing the candidate species of important fin and shell fishes.
- Gaining knowledge in the food and feeding habits, investigating the seed production and farm management and method of farming. This paper also to provide scope for employment opportunities in aquaculture activities.

### COURSE OUTCOMES

On the successful completion of the course, students will be able to:

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	To get employment opportunities in the Hatchery and Fish farm.	K3
CO2	To able to design and construct fish farm and prawn farm and to maintain the young ones in the hatchery	K4
CO3	To understand the techniques on seed production, induced breeding and live feed formulation.	K2
CO4	To acquire knowledge on composite fish culture.	K4
CO5	To understand about the water quality management, fish disease diagnostic methods.	K2

Knowledge Level : K1-Remember ; K2 –Understand ; K3 – Apply ; K4 – Analyze

### MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	S	S
CO2	M	M	S	S	M
CO3	S	S	S	M	S
CO4	M	S	M	S	M
CO5	S	M	S	M	S

S- Strong; M – Medium ; L- Low

DISTRIBUTION OF MARKS: THEORY 100%

**UNIT-I** **9 Hours**  
**INTRODUCTION TO AQUACULTURE**

Importance of aquaculture, Global scenario, Present status in India - Prospects and scope.

Aquaculture Farms- Site selection, topography, water availability and supply, soil conditions and quality. Design and layout, structure and construction.

**UNIT- II** **9 Hours**  
**BIOLOGY OF IMPORTANT CULTIVABLE SPECIES & THEIR ECONOMICS**

Standard guidance for choosing cultivable species - Seaweeds, Crustaceans (Prawns & Lobsters), Molluscs (Mussels and Oysters) and fishes - Biological criteria - Environmental adaptability and compatibility - Economic importance - economics, market values, by-products and availability in adjacent region.

**UNIT-III** **9 Hours**  
**SURVEY OF SEED RESOURCES - SEED AND FEED PRODUCTION**

Distribution and abundance of natural seed resources, collection methods and segregation.

Artificial seed production - breeding under controlled condition, induced breeding technique, larval rearing, packing and transportation.

Live feed - Microalgae, Rotifer and Artemia - their culture. Feed formulation - Conventional and non-conventional ingredients, feed additives, feed attractants and feed formulations.

**UNIT-IV** **9 Hours**  
**CULTURE SYSTEMS**

Traditional, Extensive , Semi-intensive and intensive systems, composite fish culture, paddy-cum-fish culture, integrated fish culture, sewage water fish culture, raceway culture, cage, pen and rack culture, Culture system management - pond preparation, production and economics.

**UNIT-V** **9 Hours**  
**FARM MANAGEMENT**

Water quality management - temperature, salinity,  $p^H$ ,  $O_2$ ,  $CO_2$  levels, nutrients and trace elements. Control of parasites, predators, weeds and diseases in culture ponds. Disease diagnosis - ELISA, Western blotting - DNA based diagnosis of diseases and fish vaccines.

**TEXT BOOKS**

S.N O	AUTHORS	TITLE	PUBLISHER S	YEAR OF PUBLICATION
1.	Sinha, V.R.P. and Srinivastava, H.C.	Aquaculture Productivity	Oxford and IBH Publications Co., Ltd., New Delhi.	1991
2.	Dash, M.C. and Patnik, P.N.	Brackish water culture	Palani Paramount publications, Palani.	1994
3.	Paul Raj, S.	Shrimp Farming techniques, Problems and solutions	Palani Paramount Publications, Palani.	1995

4.	Ponnuchammy, R.	Practical Guide to shrimp farming.	Palani Paramount Publications, Palani	1997
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#### REFERENCE BOOKS:

S.NO	AUTHORS	TITLE	PUBLISHERS	YEAR OF PUBLICATION
1.	Balugut, E.A	Aquaculture system and practices	A selected review publishing House, New Delhi.	1989
2.	Michael, B.N. and Singholka, B	Freshwater Prawn Farming.	A manual of culture of Macrobrachium rosenbergii. Daya Publishing House, New Delhi	1985
3.	Paul Raj, S.	Aquaculture	A.D.Palani Paramount Publications, Palani	2000
4.	Post, G.M	Text Book of Fish Health.	TFH Publication	1983
5.	Pillay, T.V.R	Aquaculture Principles and Practices	Blackwell Scientific Publications Ltd.	1990

#### WEB SOURCES:

[www.livescience.com](http://www.livescience.com)  
[www.sciencemag.com](http://www.sciencemag.com)  
[www.treehugger.com](http://www.treehugger.com)  
[www.nature.com](http://www.nature.com)

#### TEACHING METHODOLOGY

- Class room teaching
- Assignments
- Discussions
- Home test
- PPT Presentation
- Demonstration from the Video slides, videos and interactive software.

#### SYLLABUS DESIGNERS

- Dr D.Sasikala, Assistant Professor & HOD
- Dr.V.Kiruthiga, Assistant Professor
- Dr V.Rekha, Assistant Professor
- DrA.Vinodhini, Assistant Professor
- Dr.G.Vidhya, Assistant Professor
- Dr. S. Vijayakumari, Assistant Professor