SEMESTER IV

PEZOH20 - ELECTIVE IV B: AQUACULTURE AND FARM MANAGEMENT

Year	SEM	Course code	Title of the Course	Course Type	Course Category	H/W	Credits	Marks
II	IV	PEZOH20	Aquaculture and Farm Management	Theory	Elective	5	5	100

Objective:

- To understand the culture practices of both fin fish and shell fishes.
- Gaining knowledge in the food and feeding habits, investigating the seed production and farm management and method of farming.

Course Outcomes:

On completion of the course the student will be able to…

CO1: Describe parameters of aquatic environment for aquaculture and farm management.

CO2: Elucidate biological criteria and economic significance of cultivable species.

CO3: Discuss seed production and hatchery management of commercially important cultivable fishes.

CO4: Explain different types of fish cultures techniques.

CO5: Analyse water quality parameters and biotechnological tools in disease diagnosis of culture fishes.

CO/PSO	PSO					
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	H	H	H	H	H	H
CO2	H	H	H	H	H	H
CO3	H	H	H	H	H	H
CO4	H	H	H	H	H	H
CO5	H	H	H	H	M	H

CO/PO	PO					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	H	H	H	H	H	H
CO2	H	H	H	H	H	H
CO3	H	H	H	H	H	H
CO4	H	H	H	H	M	H
CO5	H	H	H	H	H	H

Unit 1: (15 Hours)

1.1: Overview - Importance of aquaculture. (K1, K2, K3, K4, K5)

1.2: Global scenario. (K1, K2, K3, K4, K5)

1.3: Present status in India-prospects and scope.(K1, K2, K3, K4, K5)

1.4: Aquaculture Farms - Site selection, topography. (K1, K2, K3, K4, K5)

1.5: Water availability and supply, soil conditions and quality. (K1, K2, K3, K4, K5)

1.6: Design and layout, farm design, structure and construction. (K1, K2, K3, K4, K5)

Unit 2:(15 Hours)

2.1: Standard guidance for choosing cultivable species- seaweed, Crustacean (Prawns and Lobsters). (K1, K2, K3, K4, K5)

2.2: Molluscs (Clams, Cockles, Mussels and Oysters) and fishes-biological criteria. (K1, K2, K3, K4, K5)

2.3: Environmental adaptability and compatibility. (K1, K2, K3, K4, K5)

2.4: Adaptability to intensive culture. (K1, K2, K3, K4, K5)

2.5: Economic importance-economics, market values. (K1, K2, K3, K4, K5)

2.6: By products and availability in adjacent region. (K1, K2, K3, K4, K5)

Unit 3:(15 Hours)

3.1: Distribution and abundance of natural seed resources, collection methods and segregation. (K1, K2, K3, K4, K5)

3.2: Artificial seed production-breeding under controlled condition. (K1, K2, K3, K4, K5)

3.3: Induced breeding technique, larval rearing, packing and transportation. (K1, K2, K3, K4, K5)

3.4: Live feed - Microalgae, Rotifer and Artemia - their culture. (K1, K2, K3, K4, K5)

3.5: Feed formulation - conventional and non-conventional ingredients. (K1, K2, K3, K4, K5)

3.6: Feed additives, feed attractants and feed formulations. (K1, K2, K3, K4, K5)

Unit 4:(15 Hours)

4.1: Traditional, Extensive, Semi-intensive and intensive systems, composite fish culture. (K1,K2, K3, K4, K5)

4.2: Paddy-cum-fish culture. (K1, K2, K3, K4, K5)

4.3: Integrated fish culture, sewage water fish culture, raceway culture. (K1, K2, K3, K4, K5)

4.4: Cage, pen and rack culture system management. (K1, K2, K3, K4, K5)

4.5: Pond preparation. (K1, K2, K3, K4, K5)

4.6: Production and economics. (K1, K2, K3, K4, K5)

Unit 5:(15 Hours)

5.1: Water quality - temperature, Salinity, pH, O2, CLO2, levels, nutrients and trace elements (K1, K2, K3, K4, K5)

5.2: Control of parasites, predators. (K1, K2, K3, K4, K5)

5.3: Weeds and diseases in culture ponds. (K1, K2, K3, K4, K5)

5.4: Disease diagnosis-ELISA, Western blotting. (K1, K2, K3, K4, K5)

5.5: DNA based diagnosis of diseases. (K1, K2, K3, K4, K5)

5.6: Fish vaccines. (K1, K2, K3, K4, K5)

Books for Study and Reference:

Textbooks:

1. Baluyut E.A., Aquaculture system and practices-A Selected Review Publishing House, New Delhi, 1989.
2. Dash M.C and Patnik. P.N.-Brackish water Culture-Palani Paramount Publications, Palani, 1994.

Reference Books:

3. Michael. B.N and Singholka B., Freshwater Prawn Farming: A Manual of Culture of MacrobarachiumRosenbergee - Daya Publishing House, New Delhi, 1985.

4. Paul Raj S. Shrimp Farming Techniques: Problems and Solutions- Palani Paramount Publication, Palani, 1995.
5. Post G.M.- Textbook of fish Health - TFH Publication, 1983
6. Sinha, V.R.P and Srinivastava H.C. - Aquaculture Productivity-Oxford and IBH Publications Co. Ltd., New Delhi, 1991.

E-Resources:

http://www.cifa.nic.in
http://agritech.tnau.ac.in
http://aquaculturetraining.com.au
http://www.oftri.org