UZO-459 **Fish Culture** **Cr. (2)**

Course Objectives

The objectives of the course are:-

1. To disseminate the history, needs and importance of fish culture
2. To elaborate the basic components of pond fish culture
3. To describe the cultureable fish species and their biology
4. To impart knowledge regarding pond fertilization and feeding of fish

Learning outcomes.

Upon successful completion of the course, the student will be able to

1. Acquire basic knowledge of history and aims of fish culture
2. Selection of fish species on the basis of their characteristics.
3. Demonstrate site selection and components of fish ponds.
4. Compute dosage and formulation of feed and fertilizers in fish ponds.
5. Evaluate fish health and product quality

Course Contents::

1. History of fish culture
2. Aims of fish culture.
3. Pond fish culture: Planning and construction of fish pond
4. Water quality criteria
5. Culturable fishes of Pakistan.
6. Pond preparation: Fertilization of fish pond: Organic and inorganic fertilizers, fish seed stocking.
7. Artificial feeding in fish culture: Fish feeding methods, different components of fish feed, composition of commonly available feed ingredients, preparation and feed storage methods.
8. Integrated fish farming: Concepts and practices.
9. Fish enemies. Fish diseases and remedial measures.

10. Fish hatchery management.
11. Fishing gears, pre- and post-harvesting care of fish,
12. Fish handling and transportation,
13. Fish storage and marketing.
14. Principles of fish processing and preservation technology.

Teaching-Learning Strategies
Teaching will be a combination of class lectures, class discussions, and group work. Short videos /films will be shown on occasion.

Assignments
The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination

Sessional Work:	25 marks
Midterm Exam:	35 marks
Final term Exam:	40 marks

Books Recommended

1. Sharma, O. P. 2009. Handbook of Fisheries and Aquaculture. Agrotech Publishing Academy, Udaipur, New Delhi, India.
2. Hart, P. J. B. and J. D. Reynolds. 2008. Handbook of Fish Biology and Fisheries, Volume 2. Blackwell Science Ltd., New York, USA.
3. Horvaph, L., G. Tanes and C. Seagrave. 2002. Carp and Pond Fish Culture Fishing News Book, New York, USA
4. Huet, M. 1998. Text Book of Fish Culture - Breeding and Cultivation of Fish. Fishing News, London, UK.
5. Shammi, Q.J. and Bhatnagar, S. 2002. Applied Fisheries, Agro bios, India.
6. Ali, S.S. 1999. Fresh Water Fisher Biology. Naseem Book Depot, Hyderabad.

UZO-460 Fish Culture (Lab.) Cr. (1)

Course Objectives
The objectives of the course are:-
1. To disseminate knowledge about various fish species, needs and importance of fish culture
2. To elaborate the basic components of pond fish culture and water quality
3. To describe the cultureable fish species and their biology
4. To impart knowledge regarding pond fertilization and feeding of fish
5. To learn about induced fish breeding techniques and hatchery components

Learning outcomes.
Upon successful completion of the course, the student will be able to
1. Acquire basic knowledge of fish identification used in fish culture
2. Selection of fish species on the basis of their characteristics.
3. Demonstrate criteria of site selection and components of fish ponds.
4. Compute dosage and formulation of feed and fertilizers in fish ponds.
5. Evaluate fish health and product quality
6. Demonstration and practical application of fish netting in ponds

Course Contents:
1. Identification of various fishes
2. Uses of different organic and inorganic fertilizers in fish ponds

3. Determination of water quality criteria
4. Practical demonstration of induced fish breeding
5. Selection of fish feed ingredients and fish feed formulation
6. Practical demonstration of fish catch/netting
7. Visit to fish farm/hatchery etc.

Teaching-Learning Strategies

Teaching will be a combination of class lectures, class discussions, and group work. Short videos /films will be shown on occasion.

Assignments

The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination

Sessional Work:	25 marks
Midterm Exam:	35 marks
Final term Exam:	40 marks