

AQUACULTURE

Course Code : AQU 201

Course Title : Principles of Aquaculture

Credit Hours : 2 (1+1)

Full Marks: 50

Theory: 25

Practical: 25

OBJECTIVES

Upon the completion of the course, the students will be able to explain the characteristics of cultivable and cultivated fish species, and their management practices.

I. SYLLABUS

Definition and biological characteristics; water quality management; pond management; fish farming systems; fish breeding, nursing and rearing; common fish diseases and parasites.

II. COURSE OUTLINE

A. Theory

S.N.	Topic	No of Lectures
1.	Introduction: Definition of fish, fishery and aquaculture, General characteristics of fish, desirable characters of fish for culture, Importance of fish.	1
3.	Biology of cultivated fish species: Morphological characters, feeding habits, growth rate and reproductive behavior of Common carp, Chinese carps, Indigenous major carps, Tilapia, Trout, Catfishes, Sahar, Silver barb and Freshwater prawn.	2
4.	Water quality management: Physical parameters–Temperature and Turbidity; Chemical parameters-DO and pH; Biological parameters- Plankton	2
5.	Pond management: Site selection for pond construction, Liming, fertilization, Feed and Feeding, Aquatic weeds and Predators contro	3
6.	Fish farming systems (FFS):Introduction; Classification of FFS on the basis of intensity, enclosure, fish species and integration	2
7.	Fish breeding: Basic principles of fish breeding; Breeding of common carp, Chinese carps and Indigenous major carps, Fish seed rearing and transportation	3
8.	Common fish diseases and parasites: Introduction, causal organisms, symptoms and control measures of Saprolegniasis, Tail rot/fin rot, White spot disease, Dactylogyrosis, Argulosis; and Asphyxiation	2
Total		15

B. Practical

S.N.	Topic	No of Practicals
1.	Visit of a fish farm	1
2.	Morphology of cultivated fishes of Nepal	1
3.	Anatomy of fish (internal organs - alimentary canal, gills, gonads)	1
4.	Pond types and measurements of a typical pond	1
5.	Pond liming and fertilization	1
6.	Water quality measurements (temperature, transparency, DO and pH)	1
7.	Feed formulation and Feeding	1
8.	Study of different fish farming system	1
9.	Common carp breeding	3
10.	Study of fishing gears and pond netting	1
11.	Examination of skin and gills	1
12.	Identification of common drugs and chemicals used in fish health management	1
13.	Lab wrap up	1
Total		15

REFERENCES

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ICAR. 2006. Handbook of Fisheries and Aquaculture. Indian Council of Agricultural Research (ICAR), New Delhi.

Jha, D.K. 1991. Laboratory Manual of Fish Disease. Tribhuvan University, IAAS, Rampur.

Jhingran, V.G. and R.S.V. Pullin. 1985. A Hatchery Manual for the common, Chinese and Indian Major Carps. Asian Development Bank, ICLARM, Manila, Philippines.

NACA. 1989. Integrated Fish Farming in China Technical Manual 7. A World Food Day Publication of the Network of Aquaculture Centre in Asia and the Pacific, Bangkok Thailand.

Shrestha, M.K. and N.P. Pandit. 2012. A Text Book of Principles of Aquaculture (Second Edition). Aquaculture Department, Institute of Agriculture and Animal Science, Rampur, Chitwan, Nepal.

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