

Course Title: Fish and Shellfish Physiology and Endocrinology

Course Code: AQC 604

Credit Hours: 2+1

Course Teacher: Dr. Showkat Ahmad Dar

Lecture Plan

Theory

S.No.	Topics to be Covered	No. of classes
1	Endocrine glands in fishes	1
2	Hormones and their kinetics	1
3	Structure and function of neuro-endocrine system in finfish and shellfish	1
4	Hormonal control of physiology	1
5	Chemical nature of hormones	1
6	Synthesis, storage, release and control of hormones	2
7	Homeostasis	1
8	Endocrine control of growth and metabolism in fishes	2
9	Exogenous hormone administration	1
10	Implication and impact on the general health and wellbeing of fishes	1
11	Eco-physiology and influence of hormones	1
12	Adaptive mechanisms – reversible and irreversible changes	2
13	Physiology of migration and behaviour	2
14	Neurosecretory system in fishes, crustaceans and molluscs	2
15	Neurotransmitters	1
16	Physiology of ecdysis	1
17	Endocrine control of maturation	1
18	Spermatogenesis and oogenesis	2
19	Spawning and vitellogenesis	2
20	Gas exchange concept	1
21	Excretion and osmoregulation	2
Total		32

Practical

Practical No.	Practical Exercise	Hours
1	Dissection of finfish to study endocrine glands	2
2	Dissection of shellfish to study endocrine glands	2
3	Hormone assay – ELISA	2
4	Histological techniques to study reproductive glands	2
5	Histological techniques to study endocrine glands	2
6	Identification of moult stages	2
7	Application of respirometer	2
8	Application of osmometer	2
Total		16