

Lecture plan for M.F. Sc 1st semester

Department of Fish Physiology and Biochemistry

Course – Fish Physiology

Course code- FPB-501

Credit hrs. 3(2+1)

Theory

<i>Sl no.</i>	<i>Topic</i>	<i>No of lecture</i>
1.	Introduction	1
2.	Cell Physiology: Structures, Membranes, Organelles and Functions	2
3.	Cell cycle; Signalling and cell death; Cellular functions in aquatic environment	3
4.	Bioluminescence and physiology of electric organs in fishes	1
5.	Physiology of GIT: Anatomy; Digestion	2
6.	Absorption and assimilation of food, salt, and water; Digestive enzymes	1
7.	Neural and hormonal regulation of digestion	1
8.	Morphology of gills, Respiratory pigments and their functions; CO ₂ transport	2
9.	Mechanism of gaseous exchange, Gill ventilation, countercurrent principle, respiratory mechanisms	2
10.	Structure and functions of heart, Structure of blood/ haemolymph pigments; blood composition	2
11.	Blood circulation, Blood pressure, Composition of blood, Heart and cardiac output	1
12.	Excretory and osmoregulatory organs in fish and shellfish and their functions; Mechanism of osmotic and ionic regulation	2
13.	Acid-base regulation, Mechanism of excretion of nitrogenous waste; mechanisms of osmoregulation against aquatic pollutants.	2
14.	Physiology of Reproduction: Structure and functions of gonads	1
15.	Gametogenesis; Vitellogenesis; Gonadal steroidogenesis	1
16.	Seasonality of reproduction, and endocrine control of reproduction; Circadian rhythm in fish physiology; Aquatic pollutants and reproduction.	3
17.	Effect of environmental factors on the physiology of fin fish	1
Total no of lecture		28

Practical

Sl no.	Practical	No of lecture
01.	Methods of blood draw from fish	1
02	Estimation of blood plasma	1
03	Estimation of fish blood serum	1
04.	Estimation of haemoglobin from fish blood	1
05.	Estimation of No of WBC From fish blood	1
06.	Estimation of No of RBC From fish blood	1
07.	Preparation of blood smear	1
08.	Staining of blood smear	1
09.	Dissection and display of reproductive system of fish	1
Total No of Practical		9



Course teacher - Dr Sarvendra Kumar