

COLLEGE OF FISHERIES, KISHANGANJ

BIHAR ANIMAL SCIENCES UNIVERSITY, PATNA

Lecture Plan

Course code: AAH-505

Course Title: Fish and Shellfish Pathology

Credit hrs: 3 (2+1)

Prgram: M.F.Sc

Assigned Teacher: Mr. Pankaj Kumar

Theory	
Topics	No. of Classes
1. Brief introduction to finfish and shellfish anatomy and histology	1
2. General pathology of finfish and shellfish	1
3. Pathophysiology of finfish and shellfish	3
4. Stress and stressors	1
5. General adaptation syndrome	1
6. Types of cellular adaptations; Hypertrophy, hyperplasia	1
7. Atrophy and metaplasia, Neoplasia	1
8. Reversible cellular changes and accumulations; Fatty changes and pigments	2
9. Inflammation; Causes of inflammation; Cellular responses to inflammation; Mediators; various patterns of inflammation	2
10. The difference between acute and chronic inflammation; Tissue repair; Cell death; Necrosis, Apoptosis, Autophagy; Necroptosis;	3
11. Their mechanisms and different morphological patterns.	1
12. Normal constituents of blood; Alterations in the haematological parameters and enzymes with reference to different pathological conditions in finfish;	2
13. Haematology of shrimp and molluscs; Clotting mechanisms; other host defence mechanisms.	2
14. Systemic pathology of finfish integumentary system, Respiratory system,	2
15. Vascular system, Digestive system, Excretory system	2
16. Nervous system, Musculoskeletal and Endocrine system due to bacteria, Parasites and viruses	2
17. Major pathological changes due to infectious diseases in the integumentary system, Lymphoid organ	2
18. Major pathological changes due to infectious diseases in Gill, Hepatopancreas, Gut and other organs of crustaceans	2
19. Major pathological changes due to diseases in molluscs	1
Total no of classes:	32
Practical	
1. Necropsy techniques; Collection and fixation of tissues	3
2. Complete histology and different staining techniques	4
3. Examination and interpretation of the pathological changes in fish	4

4. Complete blood profile of finfish	03
5. Routes of blood collection from fish	01
6. Different staining techniques for blood cell visualization	02
7. Morphology of blood cells; Total leucocyte count; Differential leucocyte count.	01
Total Number of classes:	18



Course Instructor
Mr. Pankaj Kumar