

COLLEGE OF FISHERIES, KISHANGANJ
BIHAR ANIMAL SCIENCES UNIVERSITY, PATNA
Lecture Plan

Course code: AAH- 511

Course Title: Disease Diagnostic Techniques

Credit hrs: 3 (2+1)

Programme: M.F.Sc. 1st Yr 2nd Sem

Assigned Teachers: Dr Sudeshna Sarker & Mr. Bhartendu Vimal

Theory	No. of Classes
1. Introduction to disease diagnosis; different roles and levels of diagnosis in aquaculture	2
2. The evolution of diagnostic techniques in aquaculture; A brief introduction to diagnostic features of important diseases of finfish and shellfish.	2
3. Safety in microbiology laboratory; Bio-safety levels and risk groups	2
4. Techniques in sterilization; Preparation of microbiological media	2
5. Culture techniques; Purification	2
6. Preservation and maintenance of bacterial and fungal cultures	2
7. Bright field, Darkfield, Phase contrast, Fluorescence and electron microscopy	2
8. Introduction to cell culture techniques	2
9. Different cells used for virus isolation; CPE	2
10. Antibody-based diagnostic methods (immunohistochemistry, ELISA, western blotting, lateral flow assay etc)	2
11. Hybridoma technology and monoclonal-antibody-based diagnosis	2
12. Nucleic acid amplification methods	2
13. Types of PCR: Reverse transcriptase-PCR, Real-time PCR and Other variants of PCR	2
14. In situ hybridization	2
15. Dot blot assay; LAMP etc.	2
Total Number of classes: 30	
Practical	
1. Sample collection and preparation for microscopic, microbiological, virological and histopathological analysis	4
2. Culture of microorganisms using conventional methods	2
3. Antibiotic sensitivity testing	2
4. Serological techniques in disease diagnosis: SDS-PAGE, Western blotting, ELISA, etc.	3
5. Cell culture techniques	2
6. Molecular techniques in disease diagnosis, Nucleic acid extraction, estimation and different PCR-based diagnosis	2
7. Familiarisation of some of the commercially available diagnostic kits used in aquatic animal disease diagnosis.	2
Total Number of classes: 17	



Course Instructor