

COLLEGE OF FISHERIES, KISHANGANJ

BIHAR ANIMAL SCIENCES UNIVERSITY, PATNA

Lecture Plan

Course code: AAH-503

Course Title: Viral Diseases of Finfish and Shellfish

Credit hrs: 3(2+1)

Program: M.F.Sc.

Assigned Teacher: Dr. Pushpa Kumari & Mr. Pankaj Kumar

Theory	
Topics	No. of Classes
1. Viral classification, infection and isolation: General biology of viral infections; Virus classification (ICTV)	1
2. Virus replication; Virulence markers; Viral evasion	1
3. Principles of cell culture; Development of primary cell culture.	1
4. Maintenance of cell lines; Scaling up of cell culture; Characterization and preservation of cell lines	1
5. OIE listed viral pathogens of finfish: Pathogenesis, Molecular biology, Epidemiology and control of OIE listed viral pathogens/ diseases of finfish	1
6. Epizootic Haematopoietic Necrosis(EHN), Infectious haematopoietic necrosis (IHN)	1
7. Spring viraemia of carp (SVC), Viral Haemorrhagic Septicaemia (VHS), Infectious salmon anaemia (ISA)	2
8. Salmonid Alphavirus (SAV) and Red Seabream Iridoviral Disease (RSIVD), Cyprinid Herpesvirus 3 (CyHV-3 or KHV)	2
9. Non-OIE listed viral pathogens of finfish: Pathogenesis, molecular biology, Epidemiology, and control of non-OIE listed viral pathogens/ diseases of finfish	2
10. Oncorhynchus masou virus (OMV), Viral Encephalopathy and Retinopathy (VER), Channel Catfish Virus (CCV)	2
11. Lymphocystis, Tilapia Lake virus (TiLV), Carp Edema Virus (CEV), Piscine orthoreovirus, Cyprinid Herpes Virus-2 (CyHV-2).	2
12. OIE listed viral pathogens of shrimp and prawn: Major viral pathogens of commercially important cultured crustaceans with special reference to shrimp and prawn; clinical signs, Pathogenesis	1
13. Molecular characterization, Diagnostic methods, Epidemiology and Control associated with white spot syndrome virus (WSSV),	1
14. Infectious Hypodermal and Hematopoietic Necrosis Virus (IHHNV), Taura Syndrome Virus (TSV), Yellow Head Virus (YHV) genotype-1	2
15. Infectious Myonecrosis Virus (IMNV), Macrobrachium rosenbergii nodavirus (MrNV).	2
16. Non-OIE listed viral pathogens of shrimp: Major viral	1

pathogens of commercially important cultured crustaceans with special reference to shrimp and prawn; clinical signs, pathogenesis, molecular characterization, diagnostic methods	
17. Epidemiology and control associated with monodon baculovirus (MBV), hepatopancreatic parvo-like virus (HPV)	2
18. Baculovirus penaei (BP), baculovirus midgut gland necrosis virus (BMNV), Laem-Singh virus (LSNV)	2
19. Gill-associated virus (GAV), extra small virus (XSV), shrimp hemocyte iridescent virus (SHIV)	2
20. Reovirus, covert mortality nodavirus (CMNV)	1
21. Viral diseases of molluscs: Introduction to viral diseases of molluscs – Ostreid Herpesvirus 1 (OSHV-1)	1
22. Abalone Herpes Virus (AbHV), Haemocytic Infection Virus disease (HIV), Oyster Velar Virus (OVV)	2
Total Number of classes: 33	
Practical	
1. Sampling techniques; Case study of viral diseases	1
2. Examination of shrimp; freshwater prawn for viral infection	2
3. Examination of shrimp; molluscs for viral infection	2
4. Examination of moribund fish for viral diseases,	2
5. Preservation and processing of samples;	1
6. Virus isolation and replication,	2
7. Bioassay methods, Serological and molecular diagnostic techniques,	2
8. Plaque and neutralization assay	2
9. Development of primary cell cultures for virus studies	1
10. Maintenance of cell lines,	1
11. Viral bioinformatics.	2
Total Number of classes: 18	



**Course Instructor
Mr. Pankaj Kumar**

