

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

Course code: AAH- 506

Course Title: Fish and Shellfish Immunology

Credit hrs: 3 (2+1)

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

Assigned Teachers: Dr Sudeshna Sarker

Theory	No. of Classes
1. Phylogeny and ontogeny of the immune system	2
2. Lymphoid tissues and cellular components of the immune system; T and B cells	2
3. Mucosal immune system	1
4. Phagocytosis; Mechanism of phagocytosis	2
5. Complement system: function, components; Complement activation	2
6. Memory function and immunological tolerance	1
7. Antigens and antigenicity; Antigen processing; Superantigens; Haptens	2
8. Antibody: structure, types, Theories of antibody formation; Regulation of immune response.	2
9. Cell-mediated immune response and its components	2
10. Antibody-mediated immune responses	2
11. Polyclonal and monoclonal antibody production and application	2
12. The basic concept of aptamers, Aptabodies and Edible antibodies	2
13. Invertebrate defence mechanisms; Quasi immune response	2
14. Immunomodulation, probiotics	2
15. Aquaculture vaccines: History, concept, Development of vaccines; Advances in DNA vaccines, Recombinant vaccines, vectored vaccines, etc; Routes of administration	2
16. Adjuvants and ligands; Efficacy and Limitation of vaccines	2
17. Immune genes and their regulation	2
Total Number of classes: 32	
Practical	
1. Serum separation	1
2. Preparation of antigen	2
3. Raising of antibodies	2
4. Antigen-antibody reactions	1
5. Agglutination tests; Precipitation tests	1
6. Gel diffusion	1
7. ELISA; Antibody titration	2
8. Western blotting	1
9. Isolation of lymphocytes	1
10. Non-specific immune response: NBT assay, lysozyme assay	2
11. Prophenoloxidase in shrimp	1
12. Preparation of a simple vaccine and administration	2
Total Number of classes: 17	



Course Instructor