

**COLLEGE OF FISHERIES, KISHANGANJ**  
**BIHAR ANIMAL SCIENCES UNIVERSITY, PATNA**

**Lecture Plan**

**Course code: AAH- 501**

**Course Title: Principles of Aquatic Animal Health Management**

**Credit hrs: 3 (2+1)**

**Programme: M.F.Sc. 1<sup>st</sup> Yr 1<sup>st</sup> Sem**

**Assigned Teachers: Dr Sudeshna Sarker**

| <b>Theory</b>                                                                                             | <b>No. of classes</b> |
|-----------------------------------------------------------------------------------------------------------|-----------------------|
| 1. Introduction to aquatic animal health management: Introduction to various aspects of health management | 1                     |
| 2. Stress response                                                                                        | 1                     |
| 3. Definition of health and disease                                                                       | 1                     |
| 4. Pathogen carriers                                                                                      | 1                     |
| 5. Simple fish disease models                                                                             | 1                     |
| 6. Legislative framework                                                                                  | 1                     |
| 7. Principles of quarantine                                                                               | 1                     |
| 8. Zoning and compartmentalization                                                                        | 1                     |
| 9. Live fish transportation                                                                               | 1                     |
| 10. Import risk analysis                                                                                  | 1                     |
| 11. Health certification, Principle, Procedure                                                            | 1                     |
| 12. The regulatory body for aquaculture health certification                                              | 1                     |
| 13. One health concept of OIE: World animal health organization and importance for trading;               | 1                     |
| 14. One health concept of OIE.                                                                            | 1                     |
| 15. Health management measures in an open system                                                          | 1                     |
| 16. Health management measures in cages, Pen, Reservoirs and open-water aquaculture                       | 1                     |
| 17. Interactions of farmed and Wild animals                                                               | 1                     |
| 18. Disease exchange with wild                                                                            | 1                     |
| 19. Management measures for host, environment and pathogen                                                | 1                     |
| 20. Therapeutics and sanitizers                                                                           | 1                     |
| 21. Management measures for the environment                                                               | 1                     |
| 22. Bioremediators, Biocontrol agents, Shrimp toilet                                                      | 1                     |
| 23. Management measures for the host                                                                      | 1                     |
| 24. Specific pathogen-free (SPF)                                                                          | 1                     |
| 25. Specific pathogen-resistant (SPR) and Specific pathogen tolerant (SPT)                                | 1                     |
| 26. Probiotics                                                                                            | 1                     |
| 27. Immunomodulators                                                                                      | 1                     |
| 28. Concepts of vaccination                                                                               | 1                     |
| 29. Developing management practices and biosecurity principles                                            | 1                     |
| 30. Health maintenance                                                                                    | 1                     |
| 31. Better management practices (BMP)                                                                     | 1                     |
| 32. Good aquaculture practices (GAP)                                                                      | 1                     |
| 33. Hazard analysis and Critical control point (HACCP) and Biosecurity principles in aquaculture.         | 1                     |
| <b>Total No. of Classes</b>                                                                               | <b>33</b>             |

| <b>Practical</b>                                                                          | <b>No. of classes</b> |
|-------------------------------------------------------------------------------------------|-----------------------|
| 1) Case study I                                                                           | 1                     |
| 2) Case study II                                                                          | 1                     |
| 3) Case study III                                                                         | 1                     |
| 4) Disease risk analysis                                                                  | 1                     |
| 5) Demonstration of different management measures                                         | 1                     |
| 6) Demonstration of different diagnostic tools                                            | 1                     |
| 7) Demonstration of different diagnostic tools                                            | 1                     |
| 8) Demonstration of different diagnostic tools                                            | 1                     |
| 9) Application of therapeutics                                                            | 1                     |
| 10) Application of sanitizers                                                             | 1                     |
| 11) Application of Disinfectants                                                          | 1                     |
| 12) Visit to SPF shrimp larval production centres                                         | 1                     |
| 13) Biosecure shrimp grow-out farms                                                       | 1                     |
| 14) Documentation and comparison of different management practices at farm/hatchery level | 1                     |
| 15) Documentation and comparison of different management practices at farm/hatchery level | 1                     |
| <b>Total No. of Classes</b>                                                               | <b>15</b>             |

**Course Instructor**