**Syllabuses of B Sc (Fishery) Hons: 4-Year: 8-Semester**

**SEMESTER WISE DISTRIBUTION OF COURSES**

**I Semester**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Course Title** | **Credit hour** |
| 1 | Principles of Aquaculture | 2 (1+1) |
| 2 | Taxonomy of Finfish | 3(1+2) |
| 3 | Taxonomy of Shellfish | 2(1+1) |
| 4 | Meteorology, Climatology and Geography | 2(1+1) |
| 5 | Statistical Methods | 3(2+1) |
| 6 | Fundamentals of Biochemistry | 3(2+1) |
| 7 | Fundamentals of Microbiology | 3(2+1) |
| 8 | Soil and Water Chemistry | 3(2+1) |
| 9 | Fish in Nutrition | 1(1+0) |
| 10 | Swimming | 1(0+1)**CNC\*** |
|  | **Total** | **22(13+9)** |

\*CNC= Compulsory non-credit course.

**II Semester**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Course Title** | **Credit hour** |
| 1 | Fresh Water Aquaculture | 3 (2+1) |
| 2 | Anatomy and Biology of Finfish | 3(2+1) |
| 3 | Limnology | 3(2+1) |
| 4 | Marine Biology | 3(2+1) |
| 5 | Inland Fisheries | 3(2+1) |
| 6 | Food Chemistry | 3(2+1) |
| 7 | Information and Communication Technology | 2(1+1) |
| 8 | Aquaculture in Reservoirs | 2(1+1) |
| 9 | Physical Education, First Aid & Yoga Practices | 1(0+1)**CNC\*** |
|  | **Total** | **22(14+8)** |

\*CNC= Compulsory non-credit course.

**III Semester**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Course Title** | **Credit hour** |
| 1 | Physiology of Finfish and Shellfish | 3(2+1) |
| 2 | Fish Food Organisms | 2(1+1) |
| 3 | Aquatic Ecology, Biodiversity and Disaster Management | 3(2+1) |
| 4 | Fishery Oceanography | 2(1+1) |
| 5 | Ornamental Fish Production and Management | 2(1+1) |
| 6 | Freezing Technology | 2(1+1) |
| 7 | Genetics and Breeding | 2(1+1) |
| 8 | Fish Immunology | 2(1+1) |
| 9 | Fisheries Economics | 3(2+1) |
| 10 | Aquatic Mammals, Reptiles and Amphibians | 1(1+0) |
|  | **Total** | **22(13+9)** |

**IV Semester**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Course Title** | **Credit hour** |
| 1 | Coastal Aquaculture and Mariculture | 3(2+1) |
| 2 | Therapeutics in Aquaculture | 2(1+1) |
| 3 | Fish Nutrition and Feed Technology | 3(2+1) |
| 4 | Fish Canning Technology | 2(1+1) |
| 5 | Fish Packaging Technology | 2(1+1) |
| 6 | Fish and Shellfish Pathology | 3(2+1) |
| 7 | Fishing Craft Technology | 2(1+1) |
| 8 | Fisheries Extension Education | 2(1+1) |
| 9 | Shellfish Hatchery Management | 2(1+1) |
| 10 | Communication Skills and Personality Development | 1(0+1) |
|  | **Total** | **22(12+10)** |

**V Semester**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Course Title** | **Credit hour** |
|  |  |  |
| 1 | Finfish Hatchery Management | 3 (2+1) |
| 2 | Anatomy and Biology of Shellfish | 2 (1+1) |
| 3 | Pharmacology | 3 (2+1) |
| 4 | Fish Toxicology | 2 (1+1) |
| 5 | Marine Fisheries | 3(2+1) |
| 6 | Fisheries Co-operatives and Marketing | 2(1+1) |
| 7 | Fishing Gear Technology | 2(1+1) |
| 8 | Fish Population Dynamics and Stock Assessment | 3(2+1) |
| 9 | Coastal Zone Management | 2(1+1) |
|  | **Total** | **22(13+9)** |

**VI Semester**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Course Title** | **Credit hour** |
| 1 | Introduction to Biotechnology and Bioinformatics | 2(1+1) |
| 2 | Refrigeration and Equipment Engineering | 3(2+1) |
| 3 | Fisheries Policy and Law | 1(1+0) |
| 4 | Aquatic Pollution | 2(1+1) |
| 5 | Fishing Technology | 2(1+1) |
| 6 | Fish Products and Value Addition | 3(2+1) |
| 7 | Microbiology of Fish and Fishery Products | 3(2+1) |
| 8 | Navigation and Seamanship | 2(1+1) |
| 9 | Fish By-Products and Waste Utilization | 2(1+1) |
| 10 | Fisheries Business Management and Entrepreneurship Development | 1(1+0) |
|  | **Total** | **21(13+8)** |

**VII Semester**

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Course Title** | **Credit hour** |
|  |  |  |
| 1 | Student READY Programme |  |
|  | In-plant attachment (for 8 weeks) | 10 (0+10) |
|  | Rural Fisheries Work Experience Prog. (for 8 weeks) | 8(0+8) |
|  | Study Tour (in and outside State) (for 4 weeks) | 2(0+2) |
|  | **Total** |  **20 (0+20)** |

**VIII Semester**

|  |  |  |
| --- | --- | --- |
| Sl. No. | Course Title | Credit hour |
| 1 | Aquaculture Engineering | 3 (2+1) |
| 2 | Microbial and Parasitic Diseases of Fish and Shellfish | 3 (2+1) |
| 3 | Quality assurance of Fish and Fishery Products | 3(2+1) |
| 4 | Student READY Experiential Module (concurrent with the semester). This will include capacity building and skill development of the students in planning, development, formulation, monitoring and evaluation of project for entrepreneurial proficiency |
|  | Skill Development (for one week) | 5(0+5) |
|  | Skill Development (for one week) | 5(0+5) |
|  | Experiential Learning Programme | 12(0+12) |
|  5 | Project Work |  2 (0+2) |
|  6 | Seminar |  1 (0+1) |
|  | **Total** |  **29 (6+23)** |

Total Credit Hours 180 (84+96) +2 Compulsory Non-Credit Course \* Student READY Programme

**Student READY Experiential Module:**

**Skill Development (for one week) :** Aquarium fabrication, Analysis of soil and water qualityparameters, Preparation of Fish products or in any appropriate applied aspect of fisheries

**Experiential Learning Programme:**

A minimum of two areas should be decided by each university. Areas of specialization for Experiential Learning Programme are:

1. Ornamental fish culture

2.Seed Production

3. Trade and export management

4. Aquaclinic

5. Post Harvest technology

6. Aqua farming.

A total of 12 credits are allotted for Experiential Learning Programme and the evaluation of the same will be conducted by the Committee appointed by the authority of the institution.

**Project work:** Student will select relevant or interested area of specialization such asFish Pathology, Fish Diagnosis, Fish Pharmacology, Fish Toxicology, Fish Nutrition, Fish Immunology, Fish Genetics and Breeding, Ornamental Fish Production, Genomics in Aquaculture, Fish Stock Assessment, Aquatic Pollution, Fish Value Addition, Fish in Nutrition, Fish Processing Waste Management, Quality Control and Quality Assurance, Fish Products and By-products. He/she will prepare a research project plan and it will be presented in-front of committee appointed by the authority of the respective institution. Also, for each student, one advisor will be provided, who will guide the student in completion of proposed research plan. A total of 2 credits are allotted for project work and 1 credit for (completed project work presentation) seminar. The evaluation for the same will be conducted by the committee appointed by the authority of the respective institution.