



SARVAJANIK EDUCATION SOCIETY

**SIR P. T. SARVAJANIK COLLEGE OF SCIENCE**

NAAC Accredited 'A' (3.03 CGPA)

*COLLEGE WITH POTENTIAL FOR EXCELLENCE*



## ANNEXURE-I

### Certificate Course in Conceptual Foundation in Zoology

[Course duration: 30 Hrs]

#### Topics for the Modules:

After having thorough discussions with the experts, the course plan has been designed. There will be 5 modules:

- **Module I: Introduction to Zoology**

[Theory]

[4 Hrs]

Relation of Zoology to other sciences, Subdivisions of Zoology and Scope of Zoology

- **Module II: Important indigenous ornamental fishes and its management**

[Theory]

[4 Hrs]

Indigenous ornamental fishes - Common indigenous ornamental fishes, identification of the common ornamental fishes and its maintenance, Cyprinids: *Puntius denisonii* (red line torpedo fish), *Puntius fasciatus* (melan barb), *Puntius filamentosus* (Indian tiger barb), *Puntius curmuca* (red tailed silver shark), *Danio malabaricus* (Malabar danio); Loaches: *Nemacheilus triangularis* (Zodiac loach), *Lepidocephalus thermalis* (Malabar loach); Cichlids: *Etoplus maculatus* (yellow and orange chromides), *E. suratensis* (pearl spot), Anabantids: *Anabas testudineus* (climbing perch) and Catfishes: *Horabagrus brachysoma* (Yellowish catfish), *H. nigricollaris* (White collared imperial catfish).

[Practical]

[2 Hrs]

Water quality management in aquarium systems – sources of water, containers, storage, temperature, pH, dissolved carbon dioxide and turbidity in aquarium.

- **Module III: Fish toxicology**

[Theory]

[4 Hrs]

Introduction to toxicology, Heavy metal toxicity in fishes, Surfactant toxicity in fishes, Toxicity caused by agrochemicals, Toxicity caused by textile industries, Toxicity of drugs and chemicals used in aquaculture, Maximum residue level (mrl) of drugs and chemicals in fish, Fish as a bio-indicator, Fish as a model of genotoxicity study, General methods practiced to test fish toxicity.





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*[Practical]*

*[2 Hrs]*

Calculation of LC<sub>50</sub> value of any toxicant from the data provided, Ethological analysis of environmental effects on the fish.

• **Module IV: Prawn farming**

*[Theory]*

*[4 Hrs]*

Systematic position of prawn, Production of seed, Factors influencing the development of larvae, Methods of prawn culture, Eye stalk ablation, Culture for commercial purposes, Fishing methods, Tagging prawns, Prawn processing, Culture of freshwater prawns

*[Practical]*

*[2 Hrs]*

Identification of different species of prawn, Methods of prawn fishing

• **Module V: Field visit.**

*[10 Hrs]*





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## ANNEXURE-II

### Expected outcomes of the course:

After successfully completing the course, the students will be able to:

- Understand the basics and scope of Zoology.
- Identify the common ornamental fishes
- Demonstrate the water quality in aquarium systems.
- Elaborate the concept of fish toxicology
- Explain general methods used to test fish toxicity.
- Describe prawn farming in details.
- Work safely and effectively in laboratories engaged in testing fish toxicity in general.

