

**SARDAR PATEL UNIVERSITY**  
**Programme: MSC (Zoology)**  
**Semester: III**  
**Syllabus with effect from: June 2011**

<b>Paper Code:</b> PS03CZOO01	<b>Total Credits: 4</b>
<b>Title Of Paper:</b> Aquaculture Technologies	

Unit	Description in detail	Weightage (%)
1	General characters and classification of fishes and prawns. Culture practices: Indian major carps and exotic carps; Shrimps and prawns; Seaweeds.	
2	Induced Breeding: Hormonal regulation of gonadal development, Activity of Gonadotropin releasing hormone, application of hormones in aquaculture.	
3	Fish and Prawn/ Shrimp Diseases: Types of Diseases- viral, bacterial, fungal, protozoan and other parasitic diseases; Diagnosis; Control measures; Water quality parameters, Role of biopesticides; Application of monoclonal antibodies; Vaccines and immunostimulants; Drug resistance	
4	Aquafeed: Nutrition, Feed formulation, Feed additives, Alternative feed ingredients. Fish products and byproducts, fish processing, production of fish sauce by lactic acid fermentation. Microbial hazards in seafood.	
5	Cytogenetics and molecular techniques in fisheries: Comet Assay, Micronuclei Test, Fish Cell Culture, Application of Hybridoma Technology, Transgenesis and Androgenesis and recent developments in marine biotechnology. Jellyfish Green Fluorescent Proteins and their applications.	

**Basic Text & Reference Books:**

- Jayaram K. C. 1981. The fresh water fishes of India, Pakistan, Bangladesh, Burma and Sri Lanka.
- Jhingran V. G. 1985. Fish and Fisheries of India.
- Kurian, C. V. and Sebastian, V. O. 1986. Prawns and Prawn fisheries of India.
- Jones, F. R. H. 1968. Fish Migration.
- Rao, K. L. 1975. India's water wealth.
- Balakrishnan, N. N. and Thampy, D. M. 1980. A textbook of marine ecology.
- Lakra W. S., Abidi SAH, Mukherjee SC and Ayyappan S. 2004. Fisheries Biotechnology.
- Harvey, B. J. and Hoar, W. S. 1979. Theory and practice of induced breeding in fishes.
- T. V. R. Pillay. 1993. Aquaculture – Principles and Practices. Fishing News Book.

