



# **SRI Y.N. COLLEGE (Autonomous), Narasapur**

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## **CURRICULAR PLAN 2020-21**

### **DEPARTMENT OF ZOOLOGY & FISHERIES**

#### **I B.Sc. Aquaculture Technology; Paper-I, Semester –I**

#### **BASIC PRINCIPLES OF AQUACULTURE**

(Dr. N.H.K Durga Prasad , G. Sunitha, Ch. Durga Bhavani)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Allotted	Activity	Hours Allotted
1.	Feb	I week	Concept of Blue Revolution – History and definition of Aquaculture.	Guest Lecture	Teaching	16	Assignment	1
		II week	Fresh Water Aquaculture, Brackish Water Aqua Culture and Mari Culture.					
		III week	Different aquaculture system. Pond, Cage, Pen, Running Water					
		IV week	Extensive, Semi Intensive, Intensive System					
2.	March	I week	Monoculture, Poly Culture and Mono Sex Culture Systems and Mixed Culture	Quiz	Teaching	16	Assignment	1
		II week	Food chains and Food Web					
		III week	Lotic and lentic system, Streams and Springs.					
		IV week	Importance of plankton and Benthos in culture ponds and primary productivity					

3.	April	I week	Functional classification of Pond – Nursery, rearing, production	Seminar	Teaching	16	Slip test Assignment	1 1
		II week	Stocking and quarantine ponds.					
		III week	Hatchery design – Fish Hatchery					
		IV week	Important, (nature of soil, water resources) Factors in the construction of an ideal fish Pond					
4.	May	I week	Site selection topography, nature of the soil, water resources.	Quiz	Teaching	16	Slip test Assignment	1 1
		II week	Lay out and arrangements of Ponds in a Fish Farm.					
		III week	Manure application in culture ponds					
		IV week	Physico - chemical conditions of soil and water					
5.	June	I week	PH, temperature, depth, turbidity.	Quiz	Teaching	16	Slip test Assignment	1 1
		II week	Eradication of Predators and weed control					
		III week	Advantages and disadvantages of weed, weed plants in culture ponds					
		IV week	aquatic weeds					
6.	July	I week	Weed Fish	Quiz	Teaching	16	Slip test	1 1
		II week	Toxins used for weed control and control of predators					
		III week	Revision					
		IV week	Revision					



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### **DEPARTMENT OF ZOOLOGY & FISHERIES**

#### **I B.Sc. Aquaculture Technology; Paper-II, Semester –II**

#### **BIOLOGY OF FIN FISH & SHELL FISH**

(Dr. N.H.K Durga Prasad ,G. Sunitha, Kum. Ch. Durga Bhavani)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Alloted	Activity	Hours Alloted
1.	Sep	III week	General characters and classification of fishes up to the classes.	Seminar	Teaching	8	Assignment	1
		IV week	Fish, crustaceans and molluscs of commercial importance, Sense organs of Fishes.					
2.	Oct	I week	Specialized organs in Fishes, Buoyancy in Fishes	Quiz	Teaching	16	Slip test	1
		II week	Natural Fish Food, Feeding habits, Stimuli for Feeding, gut content analysis, structural modifications in relation to feeding habits.					
		III week	Principles of age and growth determination, Growth rate measurement – scale method, otolith method.					
		IV week	Length – weight relationship, condition factor, Breeding in Fishes, breeding places, breeding habits, breeding in natural environment and in artificial ponds.					
3.	Nov	I week	Induced breeding in fishes (Fresh water), Parental care in Fishes	Seminar	Teaching	16	Slip test Assignment	1 1
		II week	Embryonic and larval development of Fish & Shrimp					
		III week	Endocrine system in fishes, Neuro secretory cell, ovary					

			and chromatophores.					
		IV week	Molting in crustacean shell fish.					



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### **DEPARTMENT OF ZOOLOGY & FISHERIES**

#### **II B.Sc. Aquaculture Technology; Paper-III, Semester –III**

#### **FISH NUTRITION & FEED TECHNOLOGY**

(Dr. N.H.K Durga Prasad , G. Sunitha, Kum. Ch. Durga Bhavani)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Allotted	Activity	Hours Allotted
1.	Aug	III week	Requirement for protein, carbohydrates, lipids, fiber.	Quiz	Teaching	8	Assignment	1
		IV week	Essential Amino acid and fatty acids					
2.	Sep	I week	Feed conversion efficiency, feed conversion ratio.	Seminar	Teaching	16	Assignment	1
		II week	Wet feeds, Moist feeds, dry feeds, mashes					
		III week	Pelleted feeds, floating and sinking pellets, advantage of pelletization.					
		IV week	Manuel feeding, automatic feeders,					
3.	Nov	I week	Surface spraying	Seminar	Teaching	12	Assignment	1

		II week	Feed formulation – Steam pelleting, grinding, mixing and drying, pelleting and packing.					1
		III week	Water stability of feeds, farm made aqua feeds, Micro-Coated feeds					
4.	Dec	I week	Micro-Encapsulated feeds and micro – bund diets.	Guest Lecture	Teaching	16	Slip test	1
		II week	Microbial, insect and rodent damage of feed chemical spoilage during storage period and proper storage methods.					1
		III week	Binders, anti-oxidants, probiotics.					1
		IV week	Feed attractants and feed stimulants.					
5.	Jan	I week	Enzymes, hormones, growth promoters and pigments.	Seminar	Teaching	8	Slip test Assignment	1
		II week	Protein deficiency, Vitamin and Mineral deficiency Symptoms.					1
6.	Feb	I week	Nutritional pathology and Anti Nutrients.	Quiz	Teaching	16	Slip test Assignment	1
		II week	Importance of Natural and supplementary feeds.					1
		III week	Importance of Balance diet.					
		IV week	Revision					
5.	March	I week	Revision		Teaching	4	Slip test	1



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### DEPARTMENT OF ZOOLOGY & FISHERIES

#### II B.Sc. Aquaculture Technology; Paper-IV, Semester –IV

#### FRESH WATER & BRACKISH WATER AQUA CULTURE

(Dr. N.H.K Durga Prasad , G. Sunitha, Kum. Ch. Durga Bhavani)

S.No	Month	Week	Syllabus	Additional input/Value addition	Curricular Activit		Co-Curricular Activity	
					Activity	Hours Allotted	Activity	Hours Allotted
1.	May	I week	Status, scope and prospects of fresh water aquaculture	Quiz	Teaching	16	Assignment	1
		II week	Different fresh water Aquaculture systems.					
		III week	Major cultivable Indian carps					
		IV week	Exotic fish species introduced to India					
2.	June	I week	Composite fish culture (fish) system of Indian and exotic carps	Quiz	Teaching	16	Assignment	1
		II week	Recent developments in the culture of clarius, anabas, murrels.					
		III week	Advantages and constraints in the culture of air breathing fishes.					
		IV week	Special systems of Aqua culture					
3.	July	I week	Fresh water prawns – Commercial value.	Group Discussion	Teaching	20	Slip test Assignment	1 1
		II week	Macrobrachium rosenbergii and M. Malcomsoni-biology					
		III week	Culture of P.Mondon					
		IV week	Culture of l-vannamei					
		V week	Mixed culture of fish and prawns.					



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### DEPARTMENT OF ZOOLOGY & FISHERIES

#### III B.Sc. Aquaculture Technology; Paper-V, Semester –V

#### FISH HEALTH MANAGEMENT

(G. Sunitha)

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Allotted	Activity	Hours Allotted
1.	Aug	III week	Introduction to fish diseases – Definition	Group discussion	Teaching	10	Assignment	1
		IV week	Types of diseases					
2.	Sep	I week	Neoplasms, Inflammation.	Quiz	Teaching	20	Assignment Guest lecture	1
		II week	Fungal diseases – Saprolegniosis, Branchiomyxosis					
		III week	Fungal diseases – Ichthyophthirius diseases					
		IV week	Viral diseases – Haemorrhagic Sepsis, Spring viremia of carps					
3.	Nov	II week	Infectious hematopoietic necrosis, channel catfish viral disease.	Seminar	Teaching	15	Slip test Assignment	1 1
		III week	Bacterial diseases – Vibrio infections, columnaris					
		IV week	Furunculosis, Bacterial gill disease, Bacterial kidney disease.					



4.	Dec	I week	Major shrimp viral diseases – Baculovirus, Bacculaviral midgut necrosis	Seminar	Teaching	20	Slip test	1
		II week	Infections hypodermal and haematopoietic, yellow head baculovirus					1
		III week	Vitamin deficiency diseases.					1
		IV week	Mineral deficiency diseases.					
5.	Jan	I week	Environmentally induced diseases.	Seminar	Teaching	10	Slip test Assignment	1
		II week	Methods of fish disease diagnosis					1
6.	Feb	I week	Prevention of fish diseases.	Quiz	Teaching	20	Slip test Assignment	1
		II week	Therapeutic Methods fish diseases.					1
		III week	Revision					
		IV week	Revision					
5.	March	I week	Revision		Teaching	05	Slip test	1



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### DEPARTMENT OF ZOOLOGY & FISHERIES

#### III B.Sc. Aquaculture Technology; Paper-VI, Semester –V FISHERIES EXTENSION, ECONOMICS & MARKETING

(Dr. N.H.K Durga Prasad)

S.No	Month	Week	Syllabus	Additional input/Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Allotted	Activity	Hours Allotted
1.	Aug	III week	Meaning and scope of economics with reference to fisheries	Seminar	Teaching	10	Assignment	1
		IV week	Basic concepts of economics – goods, services, wants and utility					
2.	Sep	I week	Demand and supply, value price, market demand and individual demand, elasticity of demand, law of diminishing marginal utility.	Quiz	Teaching	20	Assignment Guest lecture	1
		II week	Various factors influencing the fishery product's price.					
		III week	Basic marketing functions, consumer behaviour and demand					
		IV week	Fishery market survey and test marketing a product.					
3.	Nov	I week	Fish marketing – prices and price determination of fishes.	Seminar	Teaching	15	Slip test Assignment	1 1
		II week	Marketing institutions –Primary					
		III week	Marketing institutions – Secondary					

Dec	I week	Aquaculture economics – application of economics principles to aquaculture operations.	Group discussion	Teaching	20	Slip test
	II week	Various inputs and production function. Laws of variable proportions.				
	III week	Cost and earnings of aquaculture systems – carp culture, shrimp farming systems, hatcheries.				
	IV week	Cost and earnings of fishing units and freezing plants.				
Jan	I week	Socio-economic conditions of fishermen in Andhra Pradesh	Quiz	Teaching	10	Slip test Assignment
	II week	Fishermen cooperatives.				
Feb	I week	Contribution of fisheries to the national economy.	Quiz	Teaching	20	Slip test Assignment
	II week	Fisheries extension – scope and objectives, principles and features of fisheries extension education.				
	III week	ICAR programs – salient features				
	IV week	Education of farmers through print and electronic media.				
March	I week	Revision		Teaching	05	Slip test



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### **DEPARTMENT OF ZOOLOGY & FISHERIES**

#### **III B.Sc. Aquaculture Technology; Paper-VII, Semester –VI**

#### **FISHERY ENGINEERING**

(Dr. N.H.K Durga Prasad )

Paper- VII -Cluster Elective - III

S.No	Month	Week	Syllabus	Additional input/ Value addition	Curricular Activity		Co-Curricular Activity	
					Activity	Hours Allotted	Activity	Hours Allotted
1.	May	I week	Different types of fishing crafts in India – inland and marine	Seminar	Teaching	16	Assignment	1
		II week	Classification of fishing craft & Boat building materials					
		III week	Mechanization of fishing craft and its impact					
		IV week	Evolution of fishing methods and gear & Design of fishing gear and fish catching methods					
2.	June	I week	Fishing accessories, Netting materials	Seminar	Teaching	16	Assignments	1
		II week	Active fishing gear – classification and description of modern fishing gears					
		III week	Description of modern fishing gears					
		IV week	Types of Anchors – chains,ropes,blocks,leads.					
3.	July	I week	Echo sounders, fish finders, sonar and net sounds.	Field Visit	Teaching	20	Slip test Assignments	1 1
		II week	Remote sensing applications in fish finding and catching & Destructive and prohibited fishing practices					
		III week	Fish aggregating devices and artificial reefs					

	IV week	Ice making machinery & Operation of various freezing machinery					
	V week	Machinery for sausage making canning and packing & General maintenance of freezing and cold storage ice plant					



