A.S. D GOVT.DEGREE COLLEGE FOR WOMEN (A), KAKINADA

DEPARTMENT OF ZOOLOGY & AQUACULTURE TECHNOLOGY

2020-2021

Aquaculture Technology Courses offered

Year	Semester	TITLE	Course type (T/L/P)
I	I	**Basic Principles Of Aquaculture**	**T**
		Basic Principles Of Aquaculture Practical	**P**
	II	**Biology Of Fin Fish And Shell Fish**	**T**
		Biology Of Fin Fish And Shell Fish Practical	**P**
II	III	**Fish Nutrition And Feed Technology**	**T**
		Fish Nutrition And Feed Technology Practical	**P**
	IV	**Fresh Water And Brackish Water Aquaculture**	**T**
		Fresh Water And Brackish Water Aquaculture Practical	**P**
III	V	**Fish Health Management**	**T**
		Fish Health Management Practical	**P**
		Fisheries Extension Economics And Marketing	**T**
		Fisheries Extension Economics And Marketing Practical	**P**
	VI	**Ornamental Fishery(Elective-I)**	**T**
		Ornamental Fishery Practical	**P**
		Fish Processing Technology	**T**
		Fish Processing Technology Practical(Ia)	**P**

		Fishery Microbiology And Fishery By Products	**T**
		Fishery Microbiology And Fishery By Products Practical (Ib)	**P**
		Quality Control In processing plants	**T**
		Quality Control In processing plants Project(Ic)	**P**

COURSE OUTCOMES (CO's)

SEMESTER-I

BASIC PRINCIPLES OF AQUACULTURE

CO1: Students can able to create different aquaculture systems.

CO2: They can evaluate the concept of ecology and pond eco-system.

CO3: They analyze the classification of fish ponds

CO4: Students can easily understand the preparation of pond and Field visit to hatchery

SEMESTER-II

BIOLOGY OF FIN FISH & SHELLFISH

CO1: Students are able to understand the classification of cultivable fin and shell fish.

CO2: Students can analyze the food and feeding growth of fish

CO3: Students can evaluate reproductive biology.

CO4: Students can easily understand development of fishes, hormones and growth

SEMESTER-III

FISH NUTRITION & FEED TECHNOLOGY

CO1: Students can understand the nutritional requirements of cultivable fish.

CO2: Create the knowledge in feed preparation and feeding habits.

CO3: Students are able to evaluate fish feed manufacture and storage.

CO4: Students analyze the estimation of protein content in aquaculture feeds

SEMESTER-IV_ PAPER-IV

FRESH WATER & BRACKISH WATER AQUACULTURE

CO1: Students can understand the present status of freshwater aquaculture and their role in world economy and food production.

CO2: Create knowledge in life history stages of freshwater fish and prawn.

CO3: Students gain analytical and technical knowledge of prawn hatchery technology and brackish water species.

CO4: They evaluate the carp and prawn culture and composite fish culture systems.

SEMESTER-V

FISH HEALTH MANAGEMENT: (paper-V)

CO1: To gain knowledge about economics of fisheries.

CO2: To know about the changes in cell structure caused due to various diseases in fishes

CO3: To know about the fin fish diseases. To know about the shell fish diseases.

CO 4: To gain knowledge about using diagnostic tools to diagnose diseases in fishes

SEMESTER-V

FISHERIESEXTENSION, ECONOMICS & MARKETING: (paper-VI)

CO1: To gain knowledge about economics of fisheries.

CO2: To improve the knowledge about fish marketing process. To know about the economic status of fisher men.

CO3: To improve knowledge about fisheries extension methods. To know about welfare programmes of fisher men.

SEMESTER-VI

ORNAMENTAL FISHERIES: (Elective paper-I)

CO1: knowledge on the ornamental fish breeding will be learnt by the student

CO2: Learn about Management practices of ornamental fishes will be learnt.

CO3: Able to gain knowledge on the aquarium maintenance and accessories.

SEMESTER-VI

FISHERY ENGINEERING: Elective paper-II

CO1: student gain knowledge on the fishing crafts.

CO2: To learn about fishing accessories, netting materials–
Natural and synthetic fishing gear materials and yarn numbering system.

CO4: student can understand about Turtle exclusion devices By-catch reduction devices Destructive and prohibited fishing practices

CO5: Student learn about General maintenance of freezing plant and cold storage ice plant

SEMESTER-VI

FISH PROCESS TECHNOLOGY: (Cluster-I)

CO2: Students can understand the Fundamental principles involved in chilling and freezing of fish and fishery products. Various freezing methods.

CO3: Student learn about Packing and storage of dried products. Spoilage of dried products. Preventive measures. Standards for dry fish products. Cold smoking. Principles of freeze-drying.

CO4: student gain knowledge on Packing requirements for frozen and cured products. Statutory requirements for packing.

SEMESTER-VI

FISHERY MICRO BIOLOGY AND FISHERY BY-PRODUCTS: (Cluster-II)

CO 1: Student learn about General characteristics of bacteria, fungi, viruses, algae and protozoans.Ultrastructureofprokaryoticcell–structure and function of bacterial cell wall, plasma membrane, capsule, flagella and endospore. Structure of fungi and yeast cell.

CO 3 : Students can understand the Fish Microbiology: Fish as an excellent medium for growth of microorganisms.

CO 4 : : student gain knowledge on Fishery By- Products: Fishmeal, fish protein concentrate, sharkfinrays, fish maws, isinglass, fish liver oil, fish body oil, fish hydro lysates, chitin, chitosan, glucosamine hydrochloride,

SEMESTER-VI

QUALITYCONTROLINPROCESSINGPLANTS: (Cluster-III)

CO 1: Quality management, total quality concept and application in fish trade. Quality assessment of fish and fishery products

CO 3: Students can understand the water quality in fishery industry, product quality, water analysis, treatments, chlorination, ozonisation, UV radiation, reverse osmosis, techniques to remove pesticides and heavy metals.

CO 4: student gain knowledge on Fish processing units

CO 5: Student learn about Hazards in fish foods .Laboratory techniques for detection and identification of food poisoning bacteria.