M.E.S. ASMABI COLLEGE, P.VEMBALLUR

DEPARTMENT OF VOCATIONAL STUDIES FISH PROCESSING TECHNOLOGY

PROGRAMME OUTCOMES

NAME OF THE DEPARTMENT	**DEPARTMENT OF VOCATIONAL STUDIES (FISH PROCESSING TECHNOLOGY)**
PROGRAMME CODE AND PROGRAMME NAME	**B.VOC. FHP** **B.VOC FISH PROCESSING TECHNOLOGY**

COURSE OUTCOMES (COs)

I. THEORY COURSES

COURSE CODE AND COURSE NAME		**SDC1FI01 - FISH HARVESTING TECHNOLOGY**
COURSE OUTCOMES (COs)	C01	To learn about Indian Marine Fishery Resources
	C02	To learn about Indian Inland Fishery Resources
	C03	To make an understanding on Different kinds of fishing crafts and gears and its operations
	C04	To learn Fishing methods followed in India

COURSE CODE AND COURSE NAME		**SDC1FI02 Basic microbiology**
COURSE OUTCOMES (COs)	C01	Identify and characterize the microorganisms associated with daily life
	C02	Recognize the significance of microorganisms in daily life
	C03	Analyse the conditions for microbial multiplication
	C04	Differentiate the microorganisms with their specific features
	C05	Application of microorganisms in industrial (food) basis
	C06	Identify the cause and sources of Food borne infections
	C07	Summarize the symptoms associated with microbial food infection
	C08	Apply the knowledge in reducing the risk associated with microbes in routine practice

COURSE CODE AND COURSE NAME		SDC1FI03 Technology of Food Preservation
COURSE OUTCOMES (COs)	C01	To understand Types of foods and its preservation
	C02	To learn Food preservation methods by low temperature
	C03	To learn Food preservation methods by high temperature
	C04	To learn Methods of food preservation by controlling moisture
	C05	To learn Methods of food preservation by applying irradiation

COURSE CODE AND COURSE NAME		SDC2FI06 Fish Biochemistry and Spoilage
COURSE OUTCOMES (COs)	C01	To understand and analyse Biochemical constituents in fish, Crustaceans and Molluscs
	C02	To understand and analyse fatty acid composition and its significance in fishes
	C03	To understand and analyse Carbohydrate composition and its significance in fishes
	C04	To understand and analyse Causes and indices of seafood spoilage
	C05	To understand and analyse Post mortem changes occurring in chemical composition of fish muscle

COURSE CODE AND COURSE NAME		SDC2FI07 Post-Harvest Handling of Fish
COURSE OUTCOMES (COs)	C01	To understand and apply Hygienic handling practises of fish on board
	C02	To understand and apply Methods and significance pre-treatment of fish on-board
	C03	To understand and apply Types of freezing techniques in seafood industry
	C04	To understand and apply Sanitary facilities in seafood industry

COURSE CODE AND COURSE NAME	SDC2FI08 Food Safety in Seafood Industry

COURSE OUTCOMES (COs)	C01	To understand and apply Microbial standards to be followed in seafood industry
	C02	To understand and apply Food borne pathogens associated with seafood
	C03	To understand and apply Isolation and identification of microorganisms associated with seafood
	C04	To understand and apply Quality control measures in seafood industry
	C05	To understand and apply Packaging materials and types for seafood products

COURSE CODE AND COURSE NAME		**SDC3FI11 Fishery microbiology**
COURSE OUTCOMES (COs)	C01	Identify the microorganisms associated with fish and fishery products
	C02	Summarize the sources of microorganisms in fish
	C03	Identify the product characteristics that entice the microbial growth
	C04	Identify the preventive measures to be adopted to reduce the microbial load in fish
	C05	Summarize the culture techniques for microorganisms associated with fishery products
	CO6	Isolation and identification of microorganisms associated with fishery products
	CO7	Rapid detection methods of microorganisms and its application in food industry
	CO8	Understanding about different microbiological analysis methods
	CO9	Summarize the microbiological sampling in seafood industry
	CO10	Summarize the microbiological standards in seafood industry

COURSE CODE AND COURSE NAME		SDC3FI12 Freezing Technology in Seafood Plants
COURSE OUTCOMES (COs)	C01	To understand and analyse Techniques and principles of freezing in seafood industry
	C02	To understand and analyse kinds of freezing techniques used in seafood industry
	C03	To understand and analyse Treatments of products prior to freezing
	C04	To understand and analyse Physical and chemical changes of stored frozen products
	C05	To understand and analyse Preparation and grading of the seafood for freezing
	CO6	To understand and analyse Cold storage facilities of a seafood industry

COURSE CODE AND COURSE NAME		SDC3FI13 Fishery By-products and Value Addition
COURSE OUTCOMES (COs)	C01	To understand, analyse and apply Nutritional importance of fish meal and quality requirements
	C02	To understand, analyse and apply Nutritional importance of fish oil and methods to impart stability to fish oils on storage
	C03	To understand, analyse and apply Shrimp waste, crab shell and squilla utilization
	C04	To understand, analyse and apply Fish protein concentrate
	C05	To understand, analyse and apply Fish silage
	CO6	To understand, analyse and apply Miscellaneous by-products
	CO7	To understand, analyse and apply Production and trend of value-added products

COURSE CODE AND COURSE NAME		SDC3FI15 Operation Management in Fish Processing Plants
COURSE OUTCOMES (COs)	C01	To understand, analyse and apply Fundamentals of processing plant design and lay-out

	C02	To understand, analyse and apply Preventive maintenance of machinery and equipment of fish processing plants
	C03	To understand, analyse and apply Legislation and standards of effluent discharge
	C04	To understand, analyse and apply Measurement techniques and instruments used in seafood industry
	C05	To understand, analyse and apply Mechanisms and modes of fishery extension and their impact on capture fisheries and fisher livelihoods

COURSE CODE AND COURSE NAME		**SDC4FI17 Thermal Processing of Fishery Products**
COURSE OUTCOMES (COs)	**CO.1.**	To understand and analyse Principles and concepts in thermal processing of fishery products
	CO.2.	To understand and analyse Sterility and pasteurization techniques of fishery products
	CO.3.	To understand and analyse Principles and method of canning process in seafood
	CO.4.	To understand and analyse Application of hurdle technology in preserving seafood products
	CO.5.	To understand and analyse Principles of irradiation process
	CO.6.	To understand and analyse Changes occurring in irradiated products

COURSE CODE AND COURSE NAME		**SDC4FI18 Cured and Dried Fishery Products**
COURSE OUTCOMES (COs)	C01	To understand, analyse and apply water activity and sorption behaviours of foods
	C02	To understand, analyse and apply Principles of drying and dehydration
	C03	To understand, analyse and apply Curing of fish
	C04	To understand, analyse and apply Different types of curing
	C05	To understand, analyse and apply Fermented products

COURSE CODE AND COURSE NAME	**SDC5FI23 Storage and Transportation of Fishery Products**

COURSE OUTCOMES (COs)	C01	To understand, analyse and apply Fish as raw material for processing
	C02	To understand, analyse and apply Changes in Fish muscle during freezing and in the cold storage
	C03	To understand, analyse and apply Layout and factors to be considered during storage
	C04	To understand, analyse and apply Types of cold storage in seafood industry
	C05	To understand, analyse and apply Various types of fish transport systems

COURSE CODE AND COURSE NAME		**SDC5FI24(E01) Instrumentation in Fish Processing Analysis**
COURSE OUTCOMES (COs)	C01	To understand Microscopy
	C02	To understand Probe meters for pH, temperature, chlorine check
	C03	To understand Chromatographic separation methods.
	C04	To understand Blotting techniques
	C05	To understand PCR

COURSE CODE AND COURSE NAME		**SDC5FI24(E02) Fisheries Economics and Extension**
COURSE OUTCOMES (COs)	C01	Study basic economic principles
	C02	Understand the methods of business management
	C03	List the methods of Aquaculture extension and institutes/agencies concerned
	C04	Explain export procedures/policies

COURSE CODE AND COURSE NAME		**SDC5FI24(E03) Fisheries and Population Dynamics**
COURSE OUTCOMES (COs)	C01	To develop basic knowledge about marine and inland fishery resources
	C02	To create awareness about relevant fisheries stock assessment methods

COURSE CODE AND COURSE NAME		SDC5FI25 Quality Control, Inspection and Certification in Seafood
COURSE OUTCOMES (COs)	C01	To understand, analyse and apply Significance of quality control in food processing
	C02	To understand, analyse and apply Quality assessment of fish and fishery products
	C03	To understand, analyse and apply HACCP and Good manufacturing practices in seafood industry
	C04	To understand, analyse and apply Quality evaluation techniques for seafood
	C05	To understand, analyse and apply Seafood certification systems

COURSE CODE AND COURSE NAME		SDC5FI26 Economics and Marketing in Seafood Trade
COURSE OUTCOMES (COs)	C01	To understand and apply Definition, scope and role of fishery economics
	C02	To understand and apply Economic theories and growth models of fish resource development and exploitation
	C03	To understand and apply Functions of fish marketing, Markets and market structure
	C04	To understand and apply Supply Chain Management Concepts and Evolution
	C05	To understand and apply Developing marketing strategies
	CO6	To understand and apply Price analysis determination of fish and fishery products

COURSE CODE AND COURSE NAME		SDC5FI27 Packing and Labelling of Fish and Fishery Products
COURSE OUTCOMES (COs)	C01	To understand, apply and analyse technological aspects of packaging fishery products
	C02	To understand, apply and analyse development of protective packaging for fishery products
	C03	To understand, apply and analyse Methods of testing for packaging materials for their physical properties
	C04	To understand, apply and analyse Types of packaging in seafood industry

	C05	To understand, apply and analyse national and international, legislation on labelling
	CO6	To understand, apply and analyse Nutritional labelling and education act

II. PRACTICAL COURSES

COURSE CODE AND COURSE NAME		**SDC1FI04(P) Taxonomy, Fisheries and Fishing Technology**
COURSE OUTCOMES (COs)	C01	Identify and classify important fishes, molluscs and crustaceans.
	C02	Identify fishing implements.

COURSE CODE AND COURSE NAME		**SDC1FI05(P) Basic microbiology**
COURSE OUTCOMES (COs)	C01	Basic rules and requirements of a microbiology laboratory
	C02	Give emphasis towards the preparation of biological stains, reagents, media and their composition.
	C03	To get thorough different methods for staining of microorganisms.

COURSE CODE AND COURSE NAME		**SDC2FI09(P) Fish biochemistry**
COURSE OUTCOMES (COs)	C01	To learn to assess the biochemical composition of commercially available fish
	C02	To learn to assess the biochemical composition of fishery products

COURSE CODE AND COURSE NAME		**SDC3FI16(P) By-products and value-added products development**
COURSE OUTCOMES (COs)	CO1	Prepare important value-added products
	CO2	Identify and/or prepare important fishery byproducts

COURSE CODE AND COURSE NAME		**SDC4FI19(P) Fishery microbiology**
COURSE OUTCOMES (COs)	CO1	Identify the microorganisms associated with fish and fishery products

	CO2	Summarize the sources of microorganisms in fish
	CO3	Identify the product characteristics that entice the microbial growth
	CO4	Identify the preventive measures to be adopted to reduce the microbial load in fish
	CO5	Summarize the culture techniques for microorganisms associated with fishery products
	CO6	Isolation and identification of microorganisms associated with fishery products

COURSE CODE AND COURSE NAME		**SDC4FI20(P) Biostatistics and Computer Applications**
COURSE OUTCOMES (COs)	C01	Apply statistical techniques in fish population analysis, fish growth and fishery data
	C02	Use computer aided packages in handling of fisheries and aquaculture data.
	C03	Identify important computer hardware/storage devices/peripherals
	C04	Extract information from fishery databases

COURSE CODE AND COURSE NAME		**SDC5FI28(P) Fish processing**
COURSE OUTCOMES (COs)	C01	To study present day technologies involved in fish processing

COURSE CODE AND COURSE NAME		**SDC5FI29(P) Quality control in seafood processing**
COURSE OUTCOMES (COs)	C01	To study evaluation of freshness of fish
	C02	To study evaluation spoilage in fish