

# ODD SEMESTER 2021-2022

## TEACHING PLAN

### A. General Information:

Name of the faculty	: Miss. V. Santhiya
Department	: Marine Food Processing and Preservation Technology
Programme	: I – B.Voc., Marine
Name of the Paper	: Core practical I – Anatomy of Marine Edible Animals
Programme code	: BVMBY
Lecture Hours	: 6 Hours / Week ( Total Hours – 90 )

### B. About the course :

Course objectives	Course outcomes	Teaching Methodology
<ul style="list-style-type: none"><li>• Course provides them comprehensive understanding about aquatic ecosystem and various economical important fishes.</li><li>• Students gain knowledge in the areas of responses characterization and classification of Ostracoderms, placoderms, acanthodians, holocephali, elasmobranches.</li><li>• Students gain knowledge of integumentary system - basic structure of skin, dermal and epidermal pigments, fins, and scales.</li><li>• Understanding of embryogenesis - Early development and post embryonic development.</li></ul>	<ul style="list-style-type: none"><li>• Define sea animal</li><li>• Identify features of different types of sea animals.</li><li>• To build a strong foundation in marine edible products.</li><li>• Describe the various types of sea animal.</li><li>• Students aquired knowledge in fishery science, as well as crustaceans and Molluscs.</li></ul>	<ul style="list-style-type: none"><li>• Students has to be in time for the laboratory</li><li>• Students are not allowed into the lab without prepared Observation Note.</li><li>• A student has to complete the practical and calculations at the stipulated time give to them.</li><li>• Students have to receive the signature in the observation note on the same day or on or before entering the next practical class.</li></ul>

### C. PLAN OF THE WORK

Unit/ Modules	Topic to be Covered	Proposed date	Lectur e Hours	Practic al	Remark s
Content- 6Hrs	Mounting of scales Mounting of types of Fins	09-08-2021 & 13-08-2021	—	3 Hrs 3 Hrs	
	Mounting of Barbels Determination of age of fish using scales	24-08-2021 & 31-08-2021	—	3 Hrs 3 Hrs	—
	Length-weight analysis Study of sex ratio and differentiation	07-09-2021 & 14-09-2021	—	3 Hrs 3 Hrs	—
	Dissect and display the digestive system Dissect and display the respiratory system	28-09-2021 & 06-10-2021	—	3 Hrs 3 Hrs	—
	Dissect and display the digestive system Dissect and display the respiratory system	20-10-2021 & 28-10-2020 16-11-2021 & 23-11-2021	—	3 Hrs 3 Hrs	—

## ACTIVITIES

Activities Name	Details
Repetition Class Observation Correction Record Correction Mid Semester Model Practical	16.11.2021 to 23.11.2021



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## TEACHING PLAN

### A. General Information:

Name of the faculty	: Miss. V. Santhiya
Department	: Marine Food Processing and Preservation Technology
Programme	: I – B. Voc., Marine
Name of the Paper	: Core Practical II – Harvest and Post Harvest Handling of Fish
Programme code	: BVMCY
Lecture Hours	: 6 / Week ( Total hours – 90 )

### B. About the course :

Course objectives	Course outcomes	Teaching Methodology
<ul style="list-style-type: none"> <li>• Improvement of the processing and handling of fish in terms of quality, product range and volume results in increased economic activity and employment.</li> <li>• It is also one way of stabilizing fish marketing by providing an outlet for surplus and peak catch even during emergency harvest, thereby ensuring high fishing activities and stable prices.</li> <li>• It can also contribute to the efforts related to</li> </ul>	<ul style="list-style-type: none"> <li>• Fishing craft in small-scale fisheries are generally small. They fish the area of the sea close to the shore</li> <li>• Identify features of different types of sea animals.</li> <li>• The gear they use often determines the fishing methods used. As the craft are small, there is very limited space onboard, which makes proper handling and preservation of the catch difficult.</li> <li>• Fishing communities confront severe problems in handling, distributing and marketing fish.</li> <li>• The lack of suitable</li> </ul>	<ul style="list-style-type: none"> <li>• Students has to be in time for the laboratory</li> <li>• Students are not allowed into the lab without prepared Observation Note.</li> <li>• A student has to complete the practical and calculations at the stipulated time give to them.</li> <li>• Students have to receive the signature in the observation note on the same day or on or before entering the next practical class</li> </ul>

nutritional goals. • Understanding of harvesting in fishes - Early development and post embryonic development.	infrastructure including transport and ice-making plants increases the problems of rapid spoilage.	
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### C.PLAN OF THE WORK

Unit/ Modules	Topic to be Covered	Proposed date	Lecture Hours	Practical	Remarks
Content-6Hrs	Hygienic handling of fish on board fishing vessel and on shore, Quality of ice Refrigerated sea water for fish preservation. Insulated containers for fresh fish transportation.	09-08-2021 & 12-08-2021	—	3 Hrs 3 Hrs	—
	Classification of fishing crafts  Care and maintenance of boats Fishing accessories and deck equipment Types of marine engines. Fishing methods of India.	24-08-2021 & 31-08-2021	—	3 Hrs 3 Hrs	—
	Modern commercial fishing methods- trawling, purse seining, gill netting and long lining.  Classification of gears Care and preservation of fishing gears.	07-09-2021 & 14-09-2021	—	3 Hrs 3 Hrs	—

	Pre-treatment of fish washing, gutting, filleting, deheading, peeling, deveining etc. Anti-oxidant treatment Storage life, transportation and marketing.	28-09-2021 & 06-10-2021	—	3 Hrs  3 Hrs	—
	Quality management of fish and fishery products. Sanitation in processing plants and Quality control of fresh and processed fish and fishery products	18-10-2021 & 28-10-2021 16-11-2021 & 23-11-2021	—	3 Hrs 3 Hrs	—

#### D.ACTIVITIES

Activities Name	Details
Repetition Class Observation Correction Record Correction Mid Semester Model Practical	16.11.2021 to 23.11.2021

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## TEACHING PLAN

### A. General Information:

Name of the faculty	: Miss. V. Santhiya
Department	: Marine Food Processing and Preservation Technology
Programme	: I – B. Voc., Marine
Name of the Paper	: Instrumentation and Computer Application in Fisheries ( Allied practical )
Programme code	: BVMAIY
Lecture Hours	: 6 / Week ( Total hours – 90 )

### B. About the course :

Course objectives	Course outcomes	Teaching Methodology
<ul style="list-style-type: none"> <li>• To learn, experiment, and explore computer applications in education.</li> <li>• The students will be able to: Define and explain various fundamentals of spectroscopy, qualitative and quantitative analysis.</li> <li>• Differentiate between principle, instrumentation and operation of Atomic absorption and emission Spectroscopy.</li> <li>• Explain the various Separation techniques and its instrumentation. Describe the principle and working of various Radiation detectors. Discuss the principle and working of various Gas analyzers</li> <li>• Understanding of fishes habits</li> </ul>	<ul style="list-style-type: none"> <li>• After successful completion of this course students will able handling of spectrophotometer.</li> <li>• Prepare presentation and report on computer system.</li> <li>• Identify the components of a computer system and demonstrate basic proficiency in commonly used applications</li> <li>• Create, design, and produce professional documents using word processing software (i.e., MS Word).</li> <li>• Process, manipulate, and represent numeric data using the basic functions</li> </ul>	<ul style="list-style-type: none"> <li>• Students has to be in time for the laboratory</li> <li>• Students are not allowed into the lab without prepared Observation Note.</li> <li>• A student has to complete the practical and calculations at the stipulated time give to them.</li> <li>• Students have to receive the signature in the observation note on the same day or on or before entering the next practical</li> </ul>

and habitats and their function of Instruments.	of spreadsheet software (i.e., MS Excel).	class
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### C. PLAN OF THE WORK

Unit/ Modules	Topic to be Covered	Proposed date	Lecture Hours	Practical	Remarks
Content- 6Hrs, Assessment -3 Hrs Total - 6 Hrs	Determination of Optical density using standard Incubator - Culture of microbes before and after preservation	09-08-2021 & 12-08-2021	–	3 Hrs 3 Hrs	–
	Pure culture technique Counting of microbial cell	24-08-2021 & 31-08-2021	–	3 Hrs 3 Hrs	–
	Estimation of protein in fish meal Estimation of carbohydrate in fish meal	07-09-2021 & 14-09-2021	–	3 Hrs 3 Hrs	–
	Histology slide preparation to observe fresh cells PAGE Gel to study protein profile	28-09-2021 & 06-10-2021	–	3 Hrs 3 Hrs	–
	Data entry in MS Excel Document preparation in MS word	18-10-2021 & 28-10-2021 16-11-2021 & 23-11-2021	–	3 Hrs 3 Hrs	–



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## TEACHING PLAN

### A. GENERAL INFORMATION

Name of the faculty	: Miss. V. Santhiya
Department	: Marine Food Processing and Processing Technology
Programme	: II – B.Voc., Marine
Name of the Paper	: Fish Microbiology and Quality Assurance
Programme code	: VZIY
Lecture Hours	: 6 Hours / Week ( Total Hours – 90 )

### B. About the course :

Course objectives	Course outcomes	Teaching Methodology
<ul style="list-style-type: none"> <li>• Formulation of specifications for raw materials, supplies, in plant processes, containers and finished products including shelf-life.</li> <li>• Development of test procedures. Quality levels and production variables are to be tested on some scale</li> <li>• Forms for recording and reporting, preparation of quality control charts etc. Attending to troubles and advice stoppage of production or rectification of defect.</li> <li>• Attending to special problems regarding quality and complaints.</li> <li>• To familiarize with the Good H Practices, Food Safety Mana Systems and Food Regulations.</li> </ul>	<ul style="list-style-type: none"> <li>• Explain the interactions between microorganisms and the food environment, and factors influencing their growth and survival.</li> <li>• Describe the characteristics of food borne, waterborne and spoilage microorganisms, and methods for their isolation, detection and identification.</li> <li>• Explain why microbiological quality control programmes are necessary in food production</li> <li>• Explain the effects of fermentation in food production and how it influences the microbiological quality and status of the food product.</li> <li>• Discuss the rationale for the use of standard methods and procedures for the microbiological analysis of food.</li> </ul>	<ul style="list-style-type: none"> <li>• Students has to be in time for the laboratory</li> <li>• Students are not allowed into the lab without prepared Observation Note.</li> <li>• A student has to complete the practical and calculations at the stipulated time give to them.</li> <li>• Students have to receive the signature in the observation note on the same day or on or before entering the next practical class</li> </ul>

### C. PLAN OF THE WORK

Unit/ Modules	Topic to be Covered	Proposed date	Lecture Hours	Practical	Remarks
Content- 6Hrs, Assessment -3 Hrs Total - 6 Hrs	Enumeration of total bacterial load in fish and shellfish by plate count method. Enumeration of total fungal load in cured fish and shellfish	09-08-2021 & 12-08-2021	—	3 Hrs  3 Hrs	—
	Enumeration of total spoilage organisms in fish and shellfish				
	Enumeration of anaerobic sulphate reducers in sea foods Isolation and identification of <i>E. coli</i> from fish and fishery products by MPN and membrane filter methods Isolation and identification of fecal streptococci from fish and fishery products	24-08-2021 & 31-08-2021	—	3 Hrs  3 Hrs	
	Isolation and identification of <i>Staphylococcus aureus</i> from fish and fishery products Isolation and identification of <i>Vibrio cholerae</i> and <i>Vibrio parahaemolyticus</i> in fish and fishery products.	07-09-2021 & 14-09-2021	—	3 Hrs  3 Hrs	—

	Isolation and identification of Salmonella from fish and fishery products	28-09-2021	—	3 Hrs	—
	Isolation and identification of Listeria from fish and fishery products	& 06-10-2021		3 Hrs	
	Isolation and identification of Clostridia in fish and fishery products	18-10-2021	—	3 Hrs	—
	Isolation and identification of campylobacter from fish and fishery products	& 28-10-2021		3 Hrs	
	Determination of MIC and MCC of chemical preservatives	16-11-2021			
		& 23-11-2021			

#### D. ACTIVITIES

Activities Name	Details
Repetition Class Observation Correction Record Correction Mid Semester Model Practical	16.11.2021 to 23.11.2021

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## TEACHING PLAN

### A. GENERAL INFORMATION

Name of the faculty	- Miss. V. Santhiya
Department	- Marine Food Processing and Processing Technology
Programme	- III – B.Voc., Marine
Name of the Paper	- Core Paper – Fisheries Economics
Programme Code	- VZN
Lecture Hours	- 3 Hours / Week

### B. ABOUT THE COURSE

Course Objectives	Course Outcomes	Teaching Methodology
<ul style="list-style-type: none"> <li>• After reading this lesson, you should be able to</li> <li>• To understand the concept of safe food and types of hazards associated with food.</li> <li>• To control the potential threats to Micro Economics .</li> <li>• To familiarize with the Good Hygienic Practices, Food Safety Management Systems and Food Regulations.</li> <li>• Highlight the General Agreement on Tariffs and Trade(GATT).</li> <li>• Understand the meaning of Evaluates the Marine fish landings in India(QTY).</li> </ul>	<ul style="list-style-type: none"> <li>• To control the potential threats to Micro Economics .</li> <li>• The marine fisheries sector in India is subsistence fishing and much different from the factory / commercial fishing of developed countries.</li> <li>• In addition the fuel subsidy provided contributes to less than 5 per cent of the total value of landings.</li> <li>• But on the other side the welfare measures, saving cum relief, housing and other transfer payment adds to the subsidy component in the Indian context. Evaluates the Marine fish landings in India</li> <li>• The delivery system should be able to accommodate the externality social cost.</li> </ul>	<ul style="list-style-type: none"> <li>• Power point</li> <li>• E Module</li> <li>• Chalk &amp; talk method</li> <li>• Lecture method</li> <li>• Discussion method</li> <li>• Study Assignment method</li> <li>• Seminar Method</li> </ul>

## C. PLAN OF THE WORKS

Unit/Modules	Topic to be covered	Proposed data	Lecture hours	Practical hours	Remarks
Unit – I	Introduction to Economics Microeconomics Demand Elasticity of Demand Supply and Marketable Prices Law o diminishing Marginal Utility	6.8.2021 to 20.8.2021	3 hrs 3 hrs 3 hrs 3 hrs	-	-
Unit – II	Production Function Cost and Returns of scale Break Even Analysis in Fish production system	24.8.2021 to 13.09.2021	3 hrs 3 hrs 3 hrs	-	-
Unit – III	Profit Maximization Farm Planning and Budgeting Preparation of Enterprise budget for Integrated fish farming	20.09.2021 to 08.10.2021	3 hrs 3 hrs 3 hrs 3 hrs	-	-
Unit – IV	Introduction to General Agreement on Tariffs and Trade (GATT) World Trade Organization (WTO) WTO Framework Intellectual Property Rights (IPR) Trade Related Aspects of Intellectual Property Rights (TRIPS) Bio piracy	11.10.2021 to 22.10.2021	3 hrs. 3 hrs. 3 hrs 3 hrs	-	-
Unit – V	Economic growth Fisheries trade and Environment Patents in Indian Fisheries Sector GMOs in Fisheries	16.11.2021 to 26.11.2021	3 hrs 3 hrs 3 hrs 3 hrs	-	-

## D. ACTIVITIES

Activities Name	Details
Test	Monthly Test- Unit-I (June) Monthly Test - Unit-II (July) CIA / Mid Semester – Unit-I - Unit-III Monthly Test– Unit –IV (September) <b>27.11.2021 to 08.12.2021</b> CIA / Model Examination -Unit-III
Assignment	Assignment I –Unit –I and Unit –II (August) Assignment II – Unit –III and Unit – IV (September)
Quiz	Two Mark Quiz Test - Unit I – Unit – V (October)
Seminar	Unit –V (September and October)
Tutorial Ward Meeting	Monthly once



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## TEACHING PLAN

### A. GENERAL INFORMATION

Name of the faculty	- Miss. V. Santhiya
Department	- Marine Food Processing and Processing technology
Programme	- III – B.Voc., Marine
Name of the Paper	- Quality Control of Fish and Fishery Products
Programme Code	- VZO
Lecture Hours	- 4 Hours / Week

### B. ABOUT THE COURSE

Course Objectives	Course Outcomes	Teaching Methodology
<ul style="list-style-type: none"> <li>• After reading this lesson, you should be able to</li> <li>• <b>To</b> enable the knowledge can get students about the experiment , fresh fish quality, fish spoilage process.</li> <li>• the microbiological quality methods in determination of spoilage.</li> <li>• The course will provide cured fish quality crystal formation process and methodology..</li> <li>• This involves learning about sea food production methods HACCP in biological methods.</li> <li>• Understand the meaning of Evaluates the Marine fish landings in</li> </ul>	<ul style="list-style-type: none"> <li>• Possess knowledge of the fish quality and intrinsic quality.</li> <li>• Fish preservation methods.</li> <li>• Modified Atmospheric packaging(MAP)</li> <li>• Traditional method of fish preservation</li> <li>• Methods of fish drying: Natural, Solar, Artificial, Mechanical dryer.</li> <li>• Preparation of extruded products using single screw and twin screw extruder.</li> </ul>	<ul style="list-style-type: none"> <li>• Power point</li> <li>• E Module</li> <li>• Chalk &amp; talk method</li> <li>• Lecture method</li> <li>• Discussion method</li> <li>• Study Assignment method</li> <li>• Seminar Method</li> </ul>



### C. PLAN OF THE WORKS

Unit/Modules	Topic to be covered	Proposed data	Lecture hours	Practical hours	Remarks
Unit – I	Fresh Fish quality Maintenance of quality Fish spoilage Assessment of fish quality Frozen fish quality Crystal formation Freezing rate determination Inspection of raw materials HACCP in Processing raw shrimp Recording, reporting and action	6.8.2021 to 20.8.2021	3 hrs.  3 hrs.  3 hrs.  3 hrs.	-	-
Unit – II	Cured fish quality Schedule of Quality control in the Sun dried fish Salted fish Types of salt Quality of salt Schedule of Quality control in the Salted fish Schedule of Quality control in the Hot smoked Fish	24.8.2021 to 13.09.2021	3 hrs.  3 hrs.  3 hrs.  3 hrs	-	-
Unit – III	Canned fish quality Schedule of Quality control in the Production of Fishery Products Quality defect in Canned fish products Cut out test for Canned fishery products	20.09.2021 to 08.10.2021	3 hrs.  3 hrs.  3 hrs.  3 hrs	-	-
Unit – IV	Microbiological quality		3 hrs.		

	Method of determination of the bacterial in Fish Determination of Spoilage	11.10.2021 to 22.10.2021	3 hrs. 3 hrs. 3 hrs.	-	-
Unit – V	Sanitation Hygienic practices Cleaning procedures Hygienic practices check list Phases o good cleaning procedures HACCP Hazard analysis of food Critical Control Point Rules o applying HACCP Developing HACCP Plan Biological hazards Chemical hazards Hygienic practices	16.11.2021 to 26.11.2021	3 hrs. 3 hrs. 3 hrs. 3 hrs.	-	-

### D.ACTIVITIES

Activities Name	Details
Test	Monthly Test- Unit-I (June) Monthly Test - Unit-II (July) CIA / Mid Semester – Unit-I - Unit-III Monthly Test– Unit –IV (September) <b>27.11.2021 to 08.12.2021</b> CIA / Model Examination -Unit-III
Assignment	Assignment I –Unit –I and Unit –II (August) Assignment II – Unit –III and Unit – IV (September)
Quiz	Two Mark Quiz Test - Unit I – Unit – V (October)
Seminar	Unit –V (September and October)
Tutorial Ward Meeting	Monthly once

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## TEACHING PLAN

### A. GENERAL INFORMATION

Name of the faculty	- Miss. V. Santhiya
Department	- Marine Food Processing and Processing Technology
Programme	- III – B.Voc., Marine
Name of the Paper	- Fisheries Extension Education (Core Practical)
Programme Code	- VZPY
Lecture Hours	- 6 Hours / Week (Total Hours – 90 )

### B. ABOUT THE COURSE

Course Objectives	Course Outcomes	Teaching Methodology
<p>After reading this lesson, you should be able to</p> <ul style="list-style-type: none"> <li>• To understand the concept of safe food and types of hazards associated with food.</li> <li>• To control the potential threats to Micro Economics .</li> <li>• To familiarize with the Good Hygienic Practices, Food Safety Management Systems and Food Regulations.</li> <li>• Highlight the General Agreement on Tariffs and Trade(GATT).</li> <li>• Understand the meaning of Evaluates the Marine fish landings in India(QTY).</li> </ul>	<ul style="list-style-type: none"> <li>• Visit to live fish market to know the availability of fishes and record keeping of relevant data</li> <li>• Visit to dry fish market to know the preserved and processed fishes and record keeping of relevant data</li> <li>• Collection of fish, molluscs and crustacean from adjacent fishing harbours to study identification, anatomy and record keeping of Relevant Data.</li> <li>• Traditional method of fish preservation</li> <li>• Methods of fish drying: Natural, Solar, Artificial, Mechanical dryer.</li> </ul>	<ul style="list-style-type: none"> <li>• Students has to be in time for the laboratory</li> <li>• Students are not allowed into the lab without prepared Observation Note.</li> <li>• A student has to complete the practical and calculations at the stipulated time give to them.</li> <li>• Students have to receive the signature in the observation note on the same day or on or before entering the next practical class</li> </ul>

	<ul style="list-style-type: none"> <li>Preparation of extruded products using single screw and twin screw extruder.</li> </ul>	
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### C. PLAN OF THE WORKS

Unit/ Modules	Topic to be Covered	Proposed date	Lecture Hours	Practical	Remarks
Content- 15 Hrs, Assessment -3 Hrs Total - 18 Hrs	Visit to the State Department of Fisheries- To Learn any on technique & Document preparation Visit to Marine Products Export Development Authority - To Learn any on technique & Document preparation	09-08-2021 & 13-08-2021	—	3 Hrs  3 Hrs	—
	Visit to KVKs to study the activities and extension approaches of the KVKs - To Learn any on technique & documents preparation Visit to state Agriculture Department to study the extension approaches adopted by the organisation	24-08-2021 & 31-08-2021	—	3 Hrs  3 Hrs	—

	Visit to an NGO to study their extension works and approaches in fisheries Conducting field studies on village institutions and organizations and their role in the village development	07-09-2021 & 14-09-2021	-	3 Hrs  3 Hrs	-
	Field study on participation of women in fisheries Field studies an impact of extension programmes	28-09-2021 & 06-10-2021	-	3 Hrs  3 Hrs	-
	Practical exercise on conducting method demonstration Practical exercise on preparation of charts, posters and Flash cards.	20-10-2021 & 28-10-2020 16-11-2021 & 23-11-2021	-	3 Hrs  3 Hrs	-

#### D. ACTIVITIES

Activities Name	Details
Repetition Class Observation Correction Record Correction Mid Semester Model Practical	16.11.2021 to 23.11.2021



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