ST. ALBERT'S COLLEGE (AUTONOMOUS)

ERNAKULAM

An initiative of the Archdiocese of Verapoly

(Affiliated to Mahatma Gandhi University, Kottayam)

DEPARTMENT OF FISHERIES AND AQUACULTURE

PROGRAMME:
M.Sc. APPLIED FISHERIES AND AQUACULTURE

Programme Outcomes

Programme Specific Outcomes

Course Outcomes

PROGRAMME – M.Sc. APPLIED FISHERIES AND AQUACULTURE

P O NO.	Programme Out comes Upon completion of the Post Graduate Programme, the post will be adept in a number of transferable, analytical and communication skills including
PO – 1	Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
PO – 2	Problem Solving : Solve problems from the Disciplines of concern using the Knowledge, skills and attitude acquired from humanities / science / mathematics / Social Sciences etc.
PO – 3	Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
PO – 4	Design Mindset: Represent and develop tasks and work-process for the desired. Outcome

P O NO.	Programme Specifice Outcome On completion of the two year Post Graduate program in Applied Fisheries and Aquaculture a student will have attained the following unique skill sets.
PO – 1	Make use of the concept in specific area of fisheries and aquaculture for ethically sustainable enhancement of production
PO – 2	Explain the basic concept of the physiological process of fish, its taxonomy, significance of biotechnology and its multidisciplinary nature combining genetics, biochemistry, microbiology, molecular biology, fish nutrition and health management.
PO – 3	Perform the statistical tools and computational techniques to project planning, research and data management
PO – 4	Identify the process of fish processing technology, fish capture technology and its management.

SEMESTER 1

CO -PO-PSO Mapping -

Course Name: Systematics and Taxonomy of Cultivable Aquatic Organisms

Course Title	**Systematics and Taxonomy of Cultivable Aquatic Organisms**		
Course Code	**AQU03 – PAQ1CRT0119**		
CO No.	**Course Outcomes**	**PO/PSOs Addressed**	**Cognitive Level**
CO – 1	Ability to utilize the identification keys effectively to identify different taxonomic levels.	P0 1/PSO 2	AP
CO - 2	Identify the role of modern phylogenetic methods in fish and other aquatic organisms.	PO 1/PSO 2	AP
CO – 3	Determine the species concept and methods for species identification.	PO 1/PSO 2	E
CO – 4	Analyze the taxonomic features and describe how species and other taxa are named.	P0 1/PSO 2	AN
CO – 5	Utilize the concept and techniques of systematics.	P0 1/PSO 2	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	3	-	-	-	-	3	-	-
CO2	1	-		-	-	2	-	-
CO3	3	-	-	-	-	3	-	-
CO4	2	-	-	-	-	1	-	-
CO5	2	-	-	-	-	2	-	-
AVG CO	2.2	-	-	-	-	2.2	-	-

CO -PO-PSO Mapping - Course Name: Biochemistry

Course Title	**Biochemistry**		
Course Code	**AQU03 – PAQ1CRT0219**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO – 1	Explain the nutritional and biological importance of vitamins, clinical significance of organ based function tests and biochemical basis of metabolic disorders	PO1/ PSO2	AN
CO - 2	Illustrate the synthesis of proteins, lipids, nucleic acids, and carbohydrates and their role in metabolic pathways.	PO1/PSO2	AP
CO – 3	Explain the concept of biochemical techniques to plan and carry out experiments in respect of fisheries science.	PO1/PSO2	AP
CO – 4	Identify the basics of membrane biochemistry and enzyme catalysis.	PO1/PSO2	AN
CO – 5	Classify the enzyme and explain the mode of action of enzyme.	PO1/ PSO2	AN

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	-	-	-	2	-	-
CO2	2	-		-	-	2	-	-
CO3	3	-	-	-	-	3	-	-
CO4	2	-	-	-	-	3	-	-
CO5	2	-	-	-	-	3	-	-
AVG CO	2.2	-	-	-	-	2.6	-	-

CO -PO-PSO Mapping - Course Name: Biophysics, Instrumentation and Research Methodology

Course Title	**Biophysics, Instrumentation and Research Methodology**		
Course Code	**AQU03 – PAQ1CRT0319**		
CO No.	**Course Outcomes**	**PO/PSOs Addressed**	**Cognitive Level**
CO – 1	Identify the physical principles, kinetics and methods related to biological processes like diffusion and osmosis.	PO1/ PSO2	AP
CO - 2	Explain the various scientific aspects and theories related to biophysical fields.	PO1/PSO2	E
CO – 3	Make use of different instruments and techniques of chromatography, microscopy, electrophoresis etc.	PO1/ PSO2	AP
CO – 4	Identify the different steps in scientific paper/ article/ report writing.	PO1/PSO3	AP
CO – 5	Construct the stuffing skeletal of species.	PO 4/ PSO 2	C

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	-	-	-	3	-	-
CO2	1	-		-	-	2	-	-
CO3	3	-	-	-	-	3	-	-
CO4	2	-	-	-	-	-	1	-
CO5	-	-	-	2	-	2	-	-
AVG CO	2	-	-	2	-	2.5	1	-

CO -PO-PSO Mapping - Course Name: Biostatistics and Computer Application

Course Title	**Biostatistics and Computer Application**		
Course Code	**AQU03 – PAQ1CRT0419**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO – 1	Express to present the statistical data in order to comprehend the complicated practical field scenarios.	PO 2/ PSO 3	AP
CO – 2	Develop measures that can be used to summarize a data set: mean median, mode, percentiles, variance, standard deviation, and range.	PO 2/ PSO 3	AP
CO – 3	Know how to use sample data to estimate a population mean, a population variance, and a population proportion and know how to compute point and interval estimates of the population parameters.	PO 2/ PSO 3	AN
CO – 4	Utilize with application of computer based data presentation and analytical tools, Apply to perform various numerical data processes on Microsoft office.	PO 2/ PSO 3	AP
CO – 5	Estimation of total marine fish landings.	PO 2/ PSO1,PSO 3	AN

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	-	2	-	-	-	-	2	-
CO2	-	3		-	-	-	3	-
CO3	-	3	-	-	-	-	3	-
CO4	-	2	-	-	-	-	2	-
CO5	-	2	-	-	2	-	1	-
AVG CO	-	2.4	-	-	2	-	2.2	-

CO -PO-PSO Mapping - Course Name: Taxonomy, Biophysics, Biochemistry, Biostatistics And Computer Application

Course Title	**Taxonomy, Biophysics, Biochemistry, Biostatistics And Computer Application**		
Course Code	**AQU03 – PAQ1CRP0119**		
CO No.	**Course Outcomes**	**PSOs Addressed**	**Cognitive Level**
CO – 1	Identify and differentiate elasmobranch and bony fish, larval forms of fin fish and shell fish.	PO 1/ PSO 2	AN
CO - 2	Make use of microscope, microtome, camera lucida and micrometry, chromatography and electrophoresis.	PO 2/ PSO 2	AP
CO – 3	Experiment with analysis of physico-chemical parameters of seawater, freshwater and brackish water.	PO 2 & PO 3/ PSO 2	E
CO – 4	Experiment with the estimation of glucose, protein, total lipid, cholesterol in serum/tissue	PO 2/ PSO 2	E
CO – 5	Solve statistical problems that can be used to summarize a data set and analysis of data with the use of computer.	PO 2/ PSO 3	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	-	-	-	3	-	-
CO2	-	2		-	-	2	-	-
CO3	-	3	2	-	-	2	-	-
CO4	-	3	-	-	-	2	-	-
CO5	-	3	-	-	-	-	3	-
AVG CO	2	2.75	2	-	-	2.25	3	-

CO -PO-PSO Mapping - Course Name: Ecology of Aquatic Systems and Inland Aquaculture

Course Title	**Ecology of Aquatic Systems and Inland Aquaculture**		
Course Code	**AQU03 – PAQ2CRT0119**		
CO No.	**Course Outcome**	**PO/PSOs Addressed**	**Cognitive Level**
CO – 1	Analyze how aquatic ecosystem responds to the natural and anthropogenic impacts.	PO 3/PSO 1	AN
CO - 2	Explain the basic principles of inland culture of fish, crustacean and mollusc.	PO 3/PSO 1	AP
CO - 3	Identify the site selection criteria used for fish culture and important aquaculture candidate species.	PO 3/PSO 1	AP
CO - 4	Develop sufficient knowledge in culture system development and management.	PO 3/PSO 1	AN
CO - 5	Build basic technical skills necessary for work in cage culture and pen culture, aquaponics, integrated aquaculture systems and other cultural practices.	PO 3/PSO 1	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	-	-	3	-	2	-	-	-
CO2	-	-	2	-	2	-	-	-
CO3	-	-	2	-	2	-	-	-
CO4	-	-	3	-	3	-	-	-
CO5	-	-	3	-	3	-	-	-
AVG CO	-	-	2.6	-	2.4	-	-	-

CO -PO-PSO Mapping - Course Name: Ornamental Fisheries

Course Title	**Ornamental Fisheries**		
Course Code	**AQU03 – PAQ2CRT0219**		
CO No.	**Course Outcome**	**PO/PSOs Addressed**	**Cognitive Level**
CO – 1	Develop various techniques of ornamental fish breeding, rearing and marketing.	PO 1 PSO 1 & PSO 2	AP
CO - 2	Construct of glass aquariums for private and public requirements.	PO 1/ PSO 1	AP
CO – 3	Evaluate to maintain freshwater and marine aquariums.	PO 2/PSO 1	E
CO – 4	Build knowledge in ornamental fish food production and ability to convert it into business.	PO 4/PSO 1	C
CO – 5	Extend Sufficient professional knowledge in ornamental fisheries to start own enterprise.	PO 4/PSO 1	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	-	-	3	1	-	-
CO2	2	-		-	2	-	-	-
CO3	-	2	-	-	2	-	-	-
CO4	-	-	-	3	3	-	-	-
CO5	-	-	-	3	3	-	-	-
AVG CO	2	2	-	3	2.6	1	-	-

CO -PO-PSO Mapping - Course Name: Genetics and Biotechnology in Aquaculture

Course Title	**Genetics and Biotechnology in Aquaculture**		
Course Code	**AQU03 – PAQ2CRT0319**		
CO No.	**Course Outcome**	**PO/PSOs Addressed**	**Cognitive Level**
CO – 1	Explain the mechanism and application of fish and shellfish genetic concepts.	PO 1/PSO 2	AP
CO - 2	Explain the endocrine and molecular control of sexual maturation and gonadal development of finfish and shellfish.	PO 1/ PSO 2	AP
CO – 3	Build the concepts and techniques in the production of Genetically modified/ genetically engineered organisms for the application of biotechnology for improved health management in aquaculture.	PO 1, PO 3 /PSO 2	AN
CO – 4	Outline the bioethical aspects and the various issues with respect to the biotechnological interventions in the aquaculture sector.	PO 1, PO 3/ PSO 2	AP
CO – 5	Enumerate the bioactive and the natural products and the metabolites of marine origin with a view to understand the marine bioresources.	PO 1/ PSO 2	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	-	-	3	-	2	-	-	-
CO2	-	-	2	-	2	-	-	-
CO3	-	-	2	-	2	-	-	-
CO4	-	-	3	-	3	-	-	-
CO5	-	-	3	-	3	-	-	-
AVG CO	-	-	2.6	-	2.4	-	-	-

CO -PO-PSO Mapping - Course Name: Health Management in Aquaculture systems

Course Title	**Health Management in Aquaculture systems**		
Course Code	**AQU03 – PAQ2CRT0419**		
CO No.	**Course Outcome**	**PSOs Addressed**	**Cognitive Level**
CO – 1	Identify the diseases affected in fin fish and shell fish culture systems	PO 1& PO 3 /PSO 2	AN
CO - 2	Explain the Immune system and response in fin-fishes and crustaceans	PO 1/PSO 2	AP
CO – 3	Make use of the techniques in bacteriology, virology, mycology, parasitology and histopathology with regard to identification of fish and shell fish pathogens.	PO 2/PSO 2	AP
CO – 4	Apply Immuno and Molecular Diagnostics in Aquatic Animal Health Care , PCR, RT-PCR, ELISA, Dot Blot Hybridisation, FAT, IFAT, RIA.	PO 2/ PSO 2	AP
CO – 5	Explain the Policies and Regulatory issues with regard to use of antibiotics and drugs for treatment of fish and shellfish diseases	PO 2/PSO 1 & PSO 2	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	2	-	-	2	-	-
CO2	1	-		-	-	2	-	-
CO3	2	3	-	-	-	3	-	-
CO4	2	2	-	-	-	3	-	-
CO5	-	-	-	-	1	2	-	-
AVG CO	1.75	2.5	2	-	1	2.4	-	-

CO -PO-PSO Mapping - Course Name: Inland Aquaculture, Ornamental Fisheries and Fish Health Management

Course Title	**Inland Aquaculture, Ornamental Fisheries and Fish Health Management**		
Course Code	**AQU03 – PAQ2CRP0119**		
CO No.	**Course Outcome**	**PSOs Addressed**	**Cognitive Level**
CO – 1	Identify major candidate species of fishes, crustaceans, mollusks, weed fishes, predatory fishes and insects for aquaculture.	PO 1/ PSO 2	AN
CO - 2	Identify exotic, indigenous and marine ornamental fishes and ornamental crustaceans and mollusks.	PO 1/ PSO 2	AN
CO – 3	Construct of aquarium tanks.	PO 4/ PSO 1	C
CO – 4	Take part in breeding and rearing of live bearer, egg scatter, and bubble nest builder.	PO 4/ PSO 2	C
CO – 5	Identify fish disease and monitoring the fish health.	PO 1/ PSO 2	AN

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	-	-	-	3	-	-
CO2	2	-	-	-	-	3	-	-
CO3	-	-	-	3	1	-	-	-
CO4	-	-	-	3	-	2	-	-
CO5	2	-	-	-	-	2	-	-
AVG CO	2	-	-	3	1	2.5	-	-

SEMESTER III

CO -PO-PSO Mapping - Course Name: Mari culture

Course Title	**Mari culture**		
Course Code	**AQU03 – PAQ3CRT0119**		
CO No.	**Course Outcome**	**PSOs Addressed**	**Cognitive Level**
CO – 1	Explain different finfish being cultured around the world.	PO 1/ PSO 1	AP
CO - 2	Analyze the aspects of major candidate species for Mari culture and their techniques.	PO 1 & PO 3/ PSO1	AN
CO – 3	Enumerate the steps and procedures involved in the culture of various marine fishes, crustaceans, molluscs, aquatic plants and invertebrates	PO 3/ PSO1	AP
CO – 4	Build the concept of artificial breeding technique in fin fishes and crustaceans	PO 1 & PO 3/ PSO1	AP
CO – 5	Explain the concept on brood stock maintenance, hatchery technology, induced breeding technology and larval rearing of various finfishes and crustaceans.	PO1/ PSO1	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	-	-	2	-	-	-
CO2	2	-	2	-	2	-	-	-
CO3	-	-	2	-	3	-	-	-
CO4	2	-	2	-	3	-	-	-
CO5	2	-	-	-	2	-	-	-
AVG CO	2	-	2	-	2.4	-	-	-

CO -PO-PSO Mapping - Course Name: Fish Nutrition

Course Title	**Fish Nutrition**		
Course Code	**AQU03 – PAQ3CRT0219**		
CO No.	**Course Outcome**	**PO/ PSOs Addressed**	**Cognitive Level**
CO – 1	Explain the basic principles of nutrition and the various nutrient requirements in fishes	PO1/ PSO1, PSO2	AP
CO - 2	Interpret critical scientific and ethical issues in feed formulation using various methods	PO1/ PSO1& PSO 2	E
CO – 3	Build the aspects of feed manufacturing procedures, equipment's, feed transport and feed storage from a quality standards perspective	PO 4 /PSO2	AP
CO – 4	Importance of the phytoplanktons and zooplanktons as fish food organisms and develop their culture techniques	PO 1 & PO 4/ PSO1 & PSO 2	E
CO – 5	Explain and develop the fish feed manufacturing and equipment used in feed mill	PO 1, PO 4/ PSO2	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	-	-	2-	3	-	-
CO2	2	-		-	1	2	-	-
CO3	-	-	-	2	-	2	-	-
CO4	1	-	-	2	2	2	-	-
CO5	1	-	-	3	-	3	-	-
AVG CO	1.5	-	-	2.3	1.66	2.4	-	-

CO -PO-PSO Mapping - Course Name: Microbiology and Quality Control

Course Title	**Microbiology And Quality Control**		
Course Code	**AQU03 – PAQ3CRT0319**		
CO No.	**Course Outcome**	**PSOs Addressed**	**Cognitive Level**
CO – 1	Explain the fundamentals of microbiology and quality control in seafood.	PO 1/PSO 2 & PSO 4	AP
CO - 2	Identify the quality control aspects and microbiological techniques to cater to the needs of quality food production systems.	PO 1/ PSO 2 & PSO 4	AN
CO – 3	Demonstrate the ability to identify and control spoilage issues in seafood and thereby eliminate the chances of contamination and food related hygiene issues.	PO 2/ PSO 2 & PSO 4	AN
CO – 4	Solutions to spoilage related issues in fish and fishery products.	PO 2/ PSO 2 & PSO 4	AN
CO – 5	Extend knowledge required to work as a technologist and quality assurance manager/ quality control manager in the seafood industry.	PO 1/PSO 2 & PSO 4	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	-	-	-	2	-	3
CO2	2	-		-	-	2	-	2
CO3	-	2	-	-	-	3	-	2
CO4	-	2	-	-	-	2	-	3
CO5	2	-	-	-	-	3	-	3
AVG CO	2	2	-	-	-	2.4	-	2.6

CO -PO-PSO Mapping - Course Name: Aquaculture and Fish Nutrition

Course Title	**Aquaculture and Fish Nutrition**		
Course Code	**AQU03 – PAQ3CRP0119**		
CO No.	**Course Outcome**	**PO/ PSOs Addressed**	**Cognitive Level**
CO – 1	Identify maturity stage of fin fish.	PO 1/ PSO 2	AN
CO - 2	Estimate primary productivity.	PO 2 & PO 3/ PSO 2	E
CO – 3	Formulate fish feed and determine proximate composition.	PO 2/ PSO 2	AP
CO – 4	Explain induced breeding of carp.	PO 1/ PSO 2	AP
CO – 5	Identification of seaweeds	PO 1/ PSO 2	AN

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	3	-	-	-	-	2	-	-
CO2	-	2	2	-	-	3	-	-
CO3	-	2	-	-	-	3	-	-
CO4	2	-	-	-	-	2	-	-
CO5	2	-	-	-	-	2	-	-
AVG CO	2.33	2	2	-	-	2.4	-	-

CO -PO-PSO Mapping - Course Name: Fishery Microbiology and Quality Control

Course Title	**Fishery Microbiology and Quality Control**		
Course Code	**AQU03 – PAQ3CRP0219**		
CO No.	**Course Outcome**	**PO/ PSOs Addressed**	**Cognitive Level**
CO – 1	Explain the principles of microbial culture and laboratory analysis.	PO 1/PSO 2	AP
CO – 2	Develop basic laboratory skills for the detection and isolation of various authigenic bacteria present in seafood.	PO 2/ PSO 2	AP
CO – 3	Develop in operating various instruments like autoclave, incubator, hot air oven, BOD incubator, water bath etc.	PO 2/ PSO 2	AP
CO – 4	Build skill in general bacteriological techniques for isolation of pure culture of bacteria.	PO 2/ PSO 2	AP
CO – 5	Analyse quality of fish products through different spoilage indices test.	PO 2/ PSO2	AN

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	-	-	-	2	-	-
CO2	-	2	-	-	-	3	-	-
CO3	-	2	-	-	-	2	-	-
CO4	-	3	-	-	-	3	-	-
CO5	-	3	-	-	-	3	-	-
AVG CO	2	2.5	-	-	-	2.6	-	-

CO -PO-PSO Mapping - Course Name: Hatchery Training

Course Title	**Hatchery Training**		
Course Code	**AQU03 – PAQ3CRP0319**		
CO No.	**Course Outcome**	**PO/ PSOs Addressed**	**Cognitive Level**
CO – 1	Take part in training of breeding and rearing of fish.	PO 2/ PSO 2	AP
CO - 2	Develop sufficient professional knowledge in fish hatchery to start own enterprise.	PO 4/ PSO 1 & PSO 2	C

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	-	3	-	-	-	3	-	-
CO2	-	-	-	3	1	3	-	-
AVG CO	-	3	-	3	1	3	-	-

Semester IV

CO -PO-PSO Mapping - Course Name: Post-Harvest Technology

Course Title	**Post-Harvest Technology**		
Course Code	**AQU03 – PAQ4CRT0119**		
CO No.	**Course Outcome**	**PO/ PSOs Addressed**	**Cognitive Level**
CO – 1	Build knowledge on freezing technology and adoption of techniques to control food spoilage during frozen storage	PO 1 & PO 2/ PSO 2 & PSO 4	AP
CO – 2	Explain the thermal processing techniques and advances packaging technology for fish and fishery products	PO 2/PSO 4	AP
CO – 3	Develop the techniques of curing and dehydration preservation of fish	PO 2/PSO 4	AP
CO – 4	Analyze the value addition of fish and fishery products aimed at entrepreneurship	PO 4/PSO 4	AN
CO – 5	Explain the Packaging and packaging materials in fish processing	PO 1/ PSO 4	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	1	-	-	-	2	-	3
CO2	-	2		-	-	-	-	3
CO3	-	2	-	-	-	-	-	3
CO4	-	-	-	2	-	-	-	3
CO5	2	-	-	-	-	-	-	2
AVG CO	2	1.66	-	2	-	2	-	2.8

CO -PO-PSO Mapping - Course Name: Fisheries Business Management

Course Title	**Fisheries Business Management**		
Course Code	**AQU03-PAQ4CRE0119**		
CO No.	**Course Outcome**	**PO/PSOs Addressed**	**Cognitive Level**
CO – 1	Explain the basic economic principles applied to fisheries and the aspects related to trade and exports of fish and fishery products.	PO 1/PSO 4	AP
CO - 2	Explain the exploitation and management of freshwater, brackishwater, coastal and deep sea fish resources.	PO 1, PO 3/ PSO1	AP
CO – 3	Identify the planning organization for fisheries and its role in fisheries development.	PO 1/ PSO 1	AP
CO – 4	Analyze the legal and administrative aspects of mariculture management.	PO1, PO 3/ PSO1	AN
CO – 5	Illustrate the project formulation techniques for future fisheries and aquaculture development in the country.	PO1,PO2/ PSO3	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	-	-	-	-	-	2
CO2	1	-	3	-	2	-	-	-
CO3	2	-	-	-	3	-	-	-
CO4	2	-	3	-	2	-	-	-
CO5	1	2	-	-	-	-	2	-
AVG CO	1.6	2	3	-	2.33	-	2	2

CO -PO-PSO Mapping - Course Name: Fish capture Technology & Management

Course Title	**Fish capture Technology & Management**		
Course Code	**AQU03-PAQ4CRE0219**		
CO No.	**Course Outcome**	**PO/PSOs Addressed**	**Cognitive Level**
CO – 1	Explain the evolutionary significance of fishing crafts, types of propulsion systems used in fishing craft, limitations of indigenous craft and advantages of mechanized craft.	PO1, PO 3 / PSO 4	AP
CO - 2	Identify the types of active and passive fishing gears and its design, classification.	PO1/ PSO 4	AP
CO – 3	Assess the capture fisheries management including energy management of fish capture systems.	PO 2/ PSO 1, PSO 4	E
CO – 4	Explain the aspects of navigation, seamanship, rope works.	PO 1/ PSO 1, PSO 4	AP
CO – 5	List the boat building material and explain the construction	PO1/PSO 4	AN

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	1	-	-	-	-	2
CO2	2	-		-	-	-	-	3
CO3	-	2	-	-	1	-	-	3
CO4	1	-	-	-	1	-	-	3
CO5	1	-	-	-	-	-	-	3
AVG CO	1.5	2	1	-	1	-	-	2.8

CO -PO-PSO Mapping - Course Name: Fish Immunology

Course Title	**Fish Immunology**		
Course Code	**AQU03-PAQ4CRE0319**		
CO No.	**Course Outcome**	**PO/PSOs Addressed**	**Cognitive Level**
CO – 1	Illustrate and learn to provide prophylactic approaches to clear problems associated with farm practices in a leading way of disease prevention.	PO1/PSO 2	AP
CO - 2	Distinguish specific defence mechanism and non-specific defence mechanism in fishes and crustaceans	PO1/PSO 2	AN
CO – 3	Explain fish vaccination and optimizing factor for vaccination	PO1/PSO 2	AP
CO – 4	Explain immunological systems, Phagocytic systems; Lymphoid systems; Antigen processing and major histocompatibility complex	PO1/PSO 2	AP
CO-5	Enumerate the phylogeny of fish immune system.	PO1/PSO2	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	2	-	-	-	-	2	-	-
CO2	2	-		-	-	3	-	-
CO3	2	-	-	-	-	3	-	-
CO4	2	-	-	-	-	3	-	-
CO5	1	-	-	-	-	2	-	-
AVG CO	1.8	-	-	-	-	2.6	-	-

CO -PO-PSO Mapping - Course Name: Fish Processing Technology

Course Title	**Fish Processing Technology**		
Course Code	**AQU03 – PAQ4CRP0119**		
CO No.	**Course Outcome**	**PO/PSOs Addressed**	**Cognitive Level**
CO – 1	Determine the process of filleting, packing and freezing of fish.	PO2/PSO 4	AP
CO - 2	Explain freezing preservation of fish.	PO1/PSO 4	AP
CO – 3	Build knowledge in canning procedure.	PO1/PSO 4	AP
CO - 4	Formulate fish feed preparation and evaluation of nutritional quality.	PO 4/PSO 4	C
CO – 5	Make up skills in fish value added products.	PO 4/PSO 4	C

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	-	2	-	-	-	-	-	3
CO2	2	-	-	-	-	-	-	3
CO3	2	-	-	-	-	-	-	3
CO4	-	-	-	3	-	-	-	3
CO5	-	-	-	3	-	-	-	3
AVG CO	2	2	-	3	-	-	-	3

CO -PO-PSO Mapping - Course Name: On the Job Training

Course Title	**On the Job Training**		
Course Code	**AQU03 – PAQ4OJT0119**		
CO No.	**Course Outcome**	**PO/PSOs Addressed**	**Cognitive Level**
CO – 1	Take part in the training of fish processing techniques and build technical knowledge in post-harvest technology.	PO 2/PSO 4	AP
CO - 2	Apply information and practical experience in quality check of fishery products.	PO 2/PSO 4	AP

	PO1	**PO2**	**PO3**	**PO4**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	-	2	-	-	-	-	-	3
CO2	-	2	-	-	-	-	-	3
AVG CO	-	2	-	-	-	-	-	3

PROGRAMME ARTICULATION MATRIX

COURSE CODE	COURSE	SEMESTER	PROGRAMME OUTCOMES				PROGRAMME SPECIFIC OUTCOMES			
			PO 1	PO 2	PO 3	PO 4	PSO 1	PSO 2	PSO 3	PSO 4
PAQ1CRT0119	Systematics and Taxonomy of Cultivable Aquatic Organisms	I	2.2	-	-	-	-	2.2	-	-
PAQ1CRT0219	Biochemistry	I	2.2	-	-	-	-	2.6	-	-
PAQ1CRT0319	Biophysics, Instrumentation and Research Methodology	I	2	-	-	2	-	2.5	1	-
PAQ1CRT0419	Biostatistics and Computer Application	I	-	2.4	-	-	2	-	2.2	-
PAQ1CRP0119	Taxonomy, Biochemistry, Biophysics, Biostatistics and Computer Applications	I	2	2.75	2	-	-	2.25	3	-
PAQ2CRT0119	Ecology of Aquatic Systems and Inland Aquaculture	II	-	-	2.6	-	2.4	-	-	-
PAQ2CRT0219	Ornamental Fisheries	II	2	2	-	3	2.6	1	-	-
PAQ2CRT0319	Genetics and Biotechnology in Aquaculture	II	2	-	2	-	-	2.6	-	-
PAQ2CRT0419	Health Management in Aquaculture	II	1.75	2.5	2	-	1	2.4	-	-

PAQ2CR P0119	Inland Aquaculture, Ornamental Fisheries and Fish Health Management	II	2	-	-	3	1	2.5	-	-
PAQ3CR T0119	Mariculture	III	2	-	2	-	2.4	-	-	-
PAQ3CR T0219	Fish Nutrition	III	1.5	-	-	2.3	1.66	2.4	-	-
PAQ3CR T0319	Microbiology and Quality Management	III	2	2	-	-	-	2.4	-	2.6
PAQ3CR P0119	Aquaculture and Fish Nutrition	III	2.33	2	2	-	-	2.4	-	-
PAQ3CR P0219	Fishery Microbiology and Quality Control	III	2	2.5	-	-	-	2.6	-	-
PAQ3CR P0319	Hatchery Training	III	-	3	-	3	1	3	-	-
PAQ4CR T0119	Post-Harvest Technology	IV	2	1.66	-	2	-	2	-	2.8
PAQ4CR P0119	Fish Processing Technology	IV	2	2	-	3	-	-	-	3
PAQ4CR E0119	Fisheries Business Management	IV	1.6	2	3	-	2.33	-	2	2
PAQ4CR E0219	Fish Capture Technology & Management	IV	1.5	2	1	-	1	-	-	2.8
PAQ4CR E0319	Fish Immunology	IV	1.8	-	-	-	-	2.6	-	-
PAQ4OJ T0110	On Job Training	IV	-	2	-	-	-	-	-	3

St. Albert's College (Autonomous)

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