TAMIL NADU Dr. J. JAYALALITHAA FISHERIES UNIVERSITY

Self-Study Report for Under Graduate Degree (B.Tech-Fisheries Engineering) Programme

Submitted by

College of Fisheries Engineering
Vettar River View Campus
Nagapattinam– 611 002
Tamil Nadu

6.4. SELF STUDY REPORT FOR THE UG (B.Tech-Fisheries Engineering) PROGRAMME

6.4.1. BRIEF HISTORY OF B.Tech (Fisheries Engineering) DEGREE PROGRAMME:

Institute of Fisheries Technology, Nagapattinam was established on 20.02.2013 by the Government of Tamil Nadu, subsequently upgraded as College of Fisheries Engineering on 22.09.2015. B.Tech (Fisheries Engineering) is the only Under Graduate (UG) Programme offered by the college. First batch of B.Tech (Fisheries Engineering) students (20 Nos.) joined during 2015-16 and the strength was subsequently raised to 23 and 34 numbers, respectively during the academic years 2017-18 & 2018-19. In total there are six departments functioning in the college, all of these departments are offering courses in B.Tech (Fisheries Engineering).The objectives of the B.Tech (Fisheries Engineering) degree program are:

- To give Engineering inputs in the Fisheries sector
- To create human resources in the field of Fisheries Engineering
- To undertake research Programs in the field of Fisheries Engineering
- To help the fisherfolk of Tamil Nadu by transferring the technologies related to Fisheries Engineering

UG DEGREE COURSES OFFERED AT COLLEGE OF FISHERIES ENGINEERING, NAGAPATTINAM

1. DEPARTMENT OF BASIC SCIENCES

Sl. No.	Course No.	Title of the Course	Credit Hours
1.	MAT-101	Matrices, Calculus and Complex Analysis	3 (2 + 1)
2.	PHY-101	Engineering Physics	3 (2 + 1)
3.	CHE-101	Analytical Chemistry	3 (1 + 2)
4.	ENG-101	Communication Skills and Personality Development	3 (2 + 1)
5.	MAT-102	Differential Equations and Transform Theories	3 (2 + 1)
6.	CHE-102	Engineering Chemistry	3 (2 + 1)
7.	MAT-201	Numerical Methods for Engineering Applications	3 (2 + 1)
8.	MAT-301	Engineering Statistics	3 (2 + 1)
9.	MAT-302	Operations Research	2 (1 + 1)

2. DEPARTMENT OF BASIC ENGINEERING

Sl. No.	Course No.	Title of the Course	Credit Hours
1.	COM-101	Fundamentals of computing and programming	3 (2 + 1)

2.	BME-101	Manufacturing Processes	3 (2 + 1)
3.	BME-102	Engineering Mechanics	2 (1 + 1)
4.	BME-103	Thermodynamics	3 (2 + 1)
5.	BEE-101	Electrical Engineering	3 (2 + 1)
6.	BCE-101	Engineering Graphics	2 (0 + 2)
7.	BCE-201	Strength of Materials	3 (2 + 1)
8.	BCE-202	Hydraulics and Fluid Mechanics	3 (2 + 1)
9.	BME-201	Heat and Mass Transfer	2 (1 + 1)
10.	BME-202	Theory of Machines	3 (2 + 1)
11.	BCE-203	Surveying and Leveling	3 (1 + 2)
12.	BEE-201	Electronics and Instrumentation	3 (2 + 1)
13.	BME-203	Machine Design and Computer Aided Machine Drawing	3 (1 + 2)
14.	BCE-301	Engineering Materials, Estimation and Costing	3 (2 + 1)
15.	BME-301	Renewable Energy Engineering	2 (1 + 1)

3. DEPARTMENT OF AQUACULTURAL ENGINEERING

Sl.No.	Course No.	Title of the Course	Credit Hours
1.	AQE-101	Fundamentals of Aquacultural Engineering	3 (2 + 1)
2.	AQE-102	Aquaculture Machineries and Equipments	2 (1 + 1)
3.	AQE-201	Coastal Engineering and Management	3 (2 + 1)
4.	AQE-301	Advanced Aquaculture Systems	3 (2 + 1)
5.	AQE-302	Geographical Information System (GIS) and Remote Sensing in Fisheries and Aquaculture	3 (2 + 1)

4. DEPARTMENT OF FISH PROCESS ENGINEERING

Sl.No.	Course No.	Title of the Course	Credit Hours
1.	FPE-201	Principles of Fish Process Engineering	2 (1 + 1)
2.	FPE-202	Unit Operations in Fish Process Engineering	3 (2 + 1)
3.	FPE-203	Industrial Production of Fishery Products	3 (2 + 1)
4.	FPE-301	Refrigeration Engineering and Freezing Technology	3 (2 + 1)
5.	FQM-301	Food Safety and Total Quality Management (TQM)	3 (2 + 1)
6.	FPE-302	Industrial Engineering and Management	3 (2 + 1)
7.	FPE-303	Environmental Engineering and Management	3(2+1)

8.	FPE-401	Plant Design and Equipment Engineering	3 (2 + 1)
9.	FPE-402	Fish Packaging and Storage Engineering	3 (2 + 1)

5. DEPARTMENT OF FISHERIES NAUTICAL AND MARINE ENGINEERING

Sl.No.	Course No.	Title of the Course	Credit Hours
1.	FNM-201	Fishing Craft Engineering	3 (2 + 1)
2.	FNM-202	Fishing Gear Engineering	3 (2 + 1)
3.	FNM-301	Navigation, Seamanship and Marine Electronics	3 (2 + 1)
4.	FNM-302	Marine Engineering	3 (2 + 1)
5.	FNM-303	Sea Safety and Disaster Management	2 (1 + 1)
6.	FNM-401	Fishing Harbour Engineering and Fleet Management	3(2+1)

6. DEPARTMENT OF FISHERIES SCIENCE

Sl. No.	Course No.	Title of the Course	Credit Hours
1.	FBR-101	Fisheries Biology and Resource Management	3 (2 + 1)
2.	FSC-101	Biochemistry of Fish and Fishery Products	3 (2 + 1)
3.	FSC-201	Fisheries Microbiology	3 (2 + 1)
4.	FEE-301	Fisheries Extension and Management	2 (1 + 1)
5.	FEM-301	Fisheries Economics and Business Management	3 (2 + 1)

6.4.2. FACULTY STRENGTH:

DEPARTMENT WISE FACULTY STRENGTH:

Sl. No.	Name of the Post	Sanctioned strength	Staff in position	No. of Vacancy	Recommendations of V Deans' Committee
Dean's Office					
1.	Dean(Professor)	1	-	1	1
2.	Placement officer (Associate Professor)	1	-	1	1
I - Department of Basic Sciences					
1.	Professor				1
2.	Associate Professor				2
3.	Assistant Professor	3	3	-	3
II- Department of Basic Engineering					
1.	Professor				1
2.	Associate Professor				2

3.	Assistant Professor	5	5	-	3
III - Department of Aquacultural Engineering					
1.	Professor				1
2.	Associate Professor	1	1	-	2
3.	Assistant Professor	2	-	2	3
IV - Department of Fish Process Engineering					
1.	Professor	1	1	-	1
2.	Associate Professor	1	1*	-	2
3.	Assistant Professor	2	2	-	3
V - Department of Fisheries Nautical and Marine Engineering					
1.	Professor				1
2.	Associate Professor	1	1**	-	2
3.	Assistant Professor	1	1**	-	3
VI - Department of Fisheries Science					
1.	Professor				1
2.	Associate Professor				2
3.	Assistant Professor	2	1	1	3
	Total	**21**	**16**	**05**	**38**
# As such there is no recommendation given in ICAR Vth Deans' committee report for B.Tech (Fisheries Engineering) degree program. However, we followed the recommendation mentioned for B.Tech. (Agricultural Engineering)					

* Promoted as Professor through Career Advancement Scheme

**Permanent teaching staff position has been filled up with contractual position of Assistant Professor (Contractual)

6.4.3. TECHNICAL AND SUPPORTING STAFF:

STATUS OF OVERALL ADMINISTRATIVE, TECHNICAL AND SUPPORTING STAFF:

Sl.No	Name of the Post	Sanctioned strength	Staff in position	No. of Vacancy	# V Deans' committee recommendation
Administrative Staff					
1.	Administrative Officer	1	1	-	
2.	Assistant Accounts Officer	1	-	1	
3.	Superintendent	2	2	-	
4.	Assistant	3	3	-	
5.	Junior Assistant	2	-	2	
6.	Typist	4	1	3	
7.	Steno – typist	2	2	-	
8.	Lab Technician	2	1	1	
9.	Lab Assistant	2	1	1	
10.	Driver	2	2	-	
11.	Assistant Engineer	1	1	-	
	Total	**22**	**14**	**8**	

Technical and Supporting Staff * (Contractuals)					
1.	Skipper	1	1	-	
2.	Boson	1	-	1	
3.	Engine Driver	1	1	-	
4.	Mechanic Grade I (Mechanical Engg.)	1	1	-	
5.	Mechanic Grade I(Electronics and communication)	1	-	1	
6.	Mechanic Grade II (Marine Diesel Mechanic)	2	2	-	
7.	Turner	2	1	1	
8.	Fitter	2	1	1	
9.	Welder	2	2	-	
10.	Deck-hand	3	3	-	
11.	Lab. Technician	4	4	-	
12.	Lab. Assistant	4	4	-	
13.	Fishermen / Fish Processing Technician	15	2	13	
14.	Drivers	2	2	-	
15.	Farm Manager	2	2	-	
16.	Farm/ Hatchery Technician	2	2	-	
17.	Hatchery Manager	2	2	-	
18.	Farm / Hatchery Supervisors	6	5	1	
19.	Electrician	1	-	1	
20.	Plumber	1	1	-	
21.	Helper	4	3	1	
22.	Caretakers	4	1	3	
23.	Cook	2	1	1	
24.	Sweeper cum scavenger	4	3	1	
25.	Security	10	9	1	
	Total	**79**	**53**	**26**	
Total Non-Teaching Staff (Administrative Staff + Technical and Supporting Staff)		**101**	**67**	**34**	There is no standard recommendation for technical and supporting staffs
*Engaged on contractual basis in monthly consolidated pay					

The above mentioned technical and supporting staff are engaged in the overall day to day management of the institute. The aforesaid staff were also allocated to all the six departments for managing the departmental activities.

DEPARTMENT-WISE STATUS OF TECHNICAL AND SUPPORTING STAFF:

Sl.No.	Name of the Department	Staff	Staff in position
1.	Department of Basic Science	Lab Assistant	2
		Lab Technician	3
2.	Department of Basic Engineering	Lab Assistant	2
		Lab Technician	3
3.	Department of Aquaculture Engineering	Lab Assistant	2
		Lab Technician	3
4.	Department of Fish Processing Engineering	Lab Assistant	2
		Lab Technician	3
5.	Department of Fisheries Nautical and Marine Engineering	Lab Assistant	2
		Lab Technician	3
6.	Department of Fisheries Science	Lab Assistant	2
		Lab Technician	3

As such there is no recommendation given in ICAR Vth Deans' committee report for B.Tech (Fisheries Engineering) degree program. However, we followed the recommendation mentioned for B.Tech. (Agricultural Engineering)

6.4.4. CLASSROOMS AND LABORATORIES:

There are four **SMART classroom** with a capacity to accommodate 40 students of the UG degree programme. For UG degree programme, in addition to the dedicated **UG laboratories in all Six departments**, there are other advanced laboratories through which students are being taught advance technologies of the respective departments.

A. SMART UG CLASS ROOMS:

Batch	Area (Square feet)	Seating Capacity (Numbers)	Facilities
I B.Tech	710	40	a. LCD projector b. Smart board c. CCTV surveillance d. Green board e. Podium f. Window screen g. Wi-fi
II B.Tech	710	40	
III B.Tech	710	40	
IV B.Tech	710	40	

SMART CLASSROOM

B. UG LABS- GENERAL SPECIFICATIONS:

Sl,No	Department	Area (Square feet)	Seating Capacity (Numbers)	Facilities
1.	Department of Basic Sciences	1420	20 – Two batches	a. Granite top tables – 10 Nos b. Wooden tables- 10 c. Wooden platforms-13 d. Lab stools- 40 Nos e. Sink & water tab – 5 Nos f. Working platform- 68 feet g. Green board h. Wi-fi i. Landline intercom
2.	Department of Basic Engineering	10000	20 – Two batches	
3.	Department of Aquaculture Engineering	1400	20 – Two batches	
4.	Department of Fish Processing Engineering	8600	20 – Two batches	
5.	Department of Fisheries Nautical and Marine	1400	20 – Two batches	
6.	Department of Fisheries Science	2400	20 – Two batches	a. Working platform 136 feet b. Wi-fi c. Green board d. Wet lab facility with 4 nos. 1 ton tanks, 8 nos. half ton tanks and 29 225 litre tanks e. Ornamental unit with 33 number of glass tanks and 29 varieties of fishes

DEPARTMENT-WISE LABORATORIES AND EQUIPMENTS:

1. Department of Basic Science

Sl. No	Name of the Lab	Equipments / Facilities Available
1.	UG Laboratory - Physics	• Spectrometer • Travelling microscope • Reading telescope • Lawrence half shade polarimeter • Solid prism • Reading lens • Diffraction grating • Vernier microscope • Spherical calorimeter • Newton's ring apparatus • Vernier caliper • Lee's disc apparatus • Torsion pendulum • Poisellu's viscosity apparatus • Hydrostatic bench
2.	UG Laboratory - Chemistry	• UV-visible spectrophotometer • Digital potentiometer • Digital conductivity meter • Distillation unit • Sand bath • Hot plate • Ultracentrifuge • Optical microscopes • Light microscope • Digital microscope • Hot air oven • Incubator • Flame photometer • Muffle furnace • Kelplus apparatus • Fish specimen collections

2. Department of Basic Engineering

Sl. No	Name of the Lab	Equipments / Facilities Available
1.	Mechanical Engineering Workshop	• Nagmani Make All Gear Head Lathe with Accessories • Nikil Make Heavy Duty Centre Lathe (7 Feet) with Accessories • Nikil Make Medium Duty Centre Lathe (6 Feet) with Accessories • RKMM Make Universal Milling Machine with Accessories • Hydraulic Power Hacksaw Machine • Bench type Grinding Machine (dated) • Shaping Machine (18") with Accessories • Slotting Machine (10 -250 mm Stroke) with Accessories • Radial Drilling Machine with auto feed (40mm drilling capacity)
2.	**Civil Engineering Laboratory**	• Plane Table Apparatus • Dumpy Level • Theodolite • Prismatic Compass • Ranging Rod • Offset Rod 3 meters • Offset Rod 2 meters • Wooden Peg • Arrows • Levelling Staff 4 meters • Levelling Staff 5 meters • Wooden Hammer • Planimeter • Scale 30 meters • Scale 20 meters • Cross Staff (Wooden) • Cross Staff (Aluminum)

		• Optical Square Round Tye Mirror Type • Optical Square Round Tye Prism Type • Plane Table Board • Dumpy Level 7” • Dumpy Level 9” • Dumpy Level 12” • Brinell Hardness Testing Machine • Rockwell Hardness Testing Machine • Impact Testing Machine • Meteorological Instruments • Screw Thread Micrometer • Stop Watch • Dial Gauge • Rosette Strain Gauge • Compression testing machine • Spring testing machine (Tensile testing Machine) • Attachments of compression testing machine
3.	**Electrical and Electronics Engineering Laboratory**	• Function Generator (1Mhz) • Dual Trace Oscilloscope(1Mhz) • RPS(DC Single variable type) • Trainer kit - Microprocessor • ADC & DAC Interface • Trainer kit - Strain Gauge & Load cell • Load for Measurement • RPS (DC Dual variable type) • Multimeter - Digital • Galvanometer DC • Trainer - LVDT • Trainer - Hall effect transducer • Trainer - Photo Conductive • Trainer - Thermistor • Trainer - Thermocouple & RTD • Energy Meter - Single Phase • Decade Resistance Box • Voltmeter DC 0-1/50V • Voltmeter DC 0-5/10V • Voltmeter DC 0-25V • Ammeter DC 0-5/10mA • Ammeter DC 0-100/200mA

		• Ammeter DC 0-250/500uA • Panel Board - Hylam (36' x 15') • Transformer 3phase 415V • Rectifier Enclosure & accessories • DC Series Motor 5HP 220V • DC Shunt Motor 5HP 220V • AC Squirrel Cage Induction Motor • Tachometer - Digital • Rheostat - Single phase loading • Wattmeter 50/300/600V,10/20A • Megger 500V,200Mega Ohms • Tong Tester Digital MECO make • Logic Gates Trainer • Ammeter MI (0-5)A • Ammeter MI (0-10)A • Ammeter MI (0-20)A • Voltmeter MI (0-150)V • Voltmeter MI (0-300)V • Voltmeter MI (0-600)V • Wooden Table with panel • Wooden Table - 4½ x 3 x 3 • Wooden Table - 5 x 3 x 3 • Wooden Stool • Genset • Genset - Erection & Wiring
4.	**Computer Laboratory**	• Computer desktop HP • Computer desktop HP and Numeric digital UPS 600VA • Computer desktop Acer with Wifi Dongle and Numeric digital UPS 600VA • Computer desktop Dell • Computer desktop HP mother board • Computer desktop Dell with Wifi Dongle • Computer desktop Dell NVDA graphics card 1 GB DDR3 • Computer desktop Dell with Wifi dongle and numeric digital UPS 600VA • Computer desktop - Acer • Computer desktop Acer with wifi dongle

		• Computer desktop - Acer with wifi dongle and Numeric digital UPS 600VA • Laptop - HP • Laptop- Lenovo • Lenovo Laptop • Printer - HP Laser • Printer - Cannon laser • Printer - Epson photo printer • Printer - Epson colour printer ink • Printer - Samsung laser printer • Printer - Samsung (ZDTGBJA3001E4H) • Printer - samsung (ZDTGBICG30011E) • Epson printer L 565 • HP Laser jet 1020+Printer (12A Toner cartridge) • HP desk jet GT - 5811 Ink tank printer • HP Laser jet MFP 1005 printer (12A toner cartridge) • Scanner –HP • Canon fax machine • Projector - Epson • Computer running table • Mesh back chair - 10 nos • Web camera • Wifi airtel dongle - 4 • UPS - 10 KVA online UPS with batteries • Fire wall • Pendrive HP • Seagate 1 TB HDD 3.0 • Sandisk 16 GB pendrive • Wifi Receiver

3. Department of Aquacultural Engineering

Sl. No	Name of the Lab	Equipments / Facilities Available
1.	Aquacultural Engineering Laboratory	• Permeability apparatus • Mechanical sieve shaker • Liquid limit apparatus • Plastic limit apparatus • Shrinkage limit apparatus • Pycnometer • Specific gravity bottle • Total station • Global positioning system (gps) • 2 HP Paddle Wheel Aerator • 2 HP Spiral Aerator • Arc GIS software • YSI DO meter • Water quality Multiparameter • Photometer

4. Department of Fish Process Engineering

Fish Processing (Metro) plant located at Keechankuppam campus of the College of Fisheries Engineering, Nagapattinam.

Sl. No	Name of the Lab	Equipments / Facilities Available
Fish Process Engineering Laboratory		
1.	**Built-in-facilities**	• Pre-processing hall of size 9.2m x 13.9m. • Processing hall size of 12.35m x 13.9m. • Flake ice plant (3 tonnes capacity) with ice store capacity of 7.5 tonnes. • Chill room capacity 8 to 10 tonnes • Trolley blast freezer with 51 Plates (To process – 150Kg – 250Kg) • Cold storage capacity 20 tonnes (-20oC) • Separate ablution area 4 No. (Change room) for ladies and gents in each of the preprocessing and processing hall separately • Offal room –to dispose the waste through chutes from preprocessing and processing halls • Quality control lab • Packing material store

		• Store room for ingredients • Crate washing and store room • Sewage disposal systems. • SS perforated table with weighment platform • SS Perforated table • SS Flat Top • SS peeling table • 65kVA genset
2	**Processing Machineries**	• Retort processing machine • Tray drier • Freeze drier • Planetary mixer • Meat mincer • Pulverizer – Hammer mill • Pulverizer – Plate mill • Ribbon blender • Microwave oven • Air fryer • Pasta making machine • Deep frying unit • Foot operated sealer • Vacuum sealer • Induction sealer • Retort pouch sealing machine • Twin Screw extruder (under process) • Flavour coater • Form- Fill – Seal machine (Fish pickle) • Form fill seal machine (Dry fish)
3	**Analytical equipments**	• Hot air oven • Vacuum oven • Muffle furnace • Sieve analyzer • pH meter • Digital melting point apparatus • Penetrometer • Water bath apparatus • Autoclave • Centrifuge • Double distillation Unit • Laminar Flow Chamber • Incubator • Soxhlet apparatus

5. Department of Fisheries Nautical and Marine Engineering

Sl. No	Name of the Lab	Equipments / Facilities Available
1.	**Fisheries Nautical and Marine**	• Tuticorin Boat • Traditional Fishing Long Liner

	Engineering Laboratory	• Traditional Fishing Craft Trawler • Traditional Fishing Craft Outrigger Trawler • Traditional Fishing Putse Seiner • Traditional Fishing Craft Halal Machwa • Traditional Fishing Craft Cambay Boat • Traditional Fishing Craft Digout Cance • Traditional Fishing Craft Squid jigging with Artifical fish • Traditional Fishing Craft rampani boat • Traditional Fishing Craft catamaran with sails • Net Models • Garmin GPS 78 S • Charger • Rechargeable Battery • Brass Divider • Brass compass • Parallel Ruler • Set Square • Azimath Circle • Gyro Compass ship type • Globe • International code flags full set (40 pcs) (3 feet x 4 feet) • Life jackets (MMD/IRS Approved) • Marine charts Tamil nadu coastal • Navigation Light Mast Headlight (single tier) • Navigation Light Stern light (single tier) • Side Light port side (single tier) Red • All Round white (Single Tire) • All Round Red (Single Tire) • All Round Green (Single Tire) • Towing Light • Life buoy (MMD/IRS approved) with light (self – igniting Light) • Parachute Rocket • Hand Flair • Orange Smoke Signal • Side Light (Star board Side Light) Green • Daylight signal shapes (cylinder, ball, conical, diamond) • Wheel house posters • SART without certificate - training • EPRIB dummy for training • TPA • Immersion suit

		• EEBD (seconds) • Life raft (06 persons) • Fire hose 63 mm with coupling • Jet nozzle • Spray nozzle • Life raft (06 persons) • Emergency fire pump • Echo Map

6. Department of Fisheries Science

Sl. No	Name of the Lab	Equipments / Facilities Available
1	**Fisheries Science Laboratory**	**<u>Equipment in the water quality laboratory</u>** • Refractometer • Electronic top loading balance • Digital conductivity TDS meter • pH meter • All quarts double distillation unit • Water Bath • Hot air oven • Laminar Flow • Hot Plate • Analytical balance • Macroblock digestion system for automatic protein /nitrogen system • High Speed Cooling Centrifuge • Incubator • Autoclave • Muffle Furnace • BOD Incubator • Spectrophotometer • Flame Photometer • Automatic fibre estimation systems • Multiprobe system • Online UPS • Inverted light microscope • Island table 1 no • Mechanical shaker • Fat extraction system • Scrubber for protein / nitrogen system • Vacuum pressure pump kit • Water softener • Hand held digital colony counter • Automatic Nitrogen/Protein estimation system

		<u>Equipment in the disease diagnosis laboratory</u> • Water Bath • All Quarts Double Distillation • Digital Hot Air Oven • Hot Plate Rectangular • Digital Bacteriological Incubator • Vertical Autoclave • Magnetic Stirrer Hot plate • Bio photometer • Refrigerated Centrifuge • Thermal cycler • GEL DOC • Electrophoresis and power pac • Deep freezer horizontal • Analytical Balance • Vortex shaker • Laminar Air Flow • Refrigerator • Microwave oven • 10 KVA online UPS/ 360V • Mini Centrifuge • ELTEK vortex mixer & Hot plate with magnetic stirrer • Inlab Incubator • Digital Heating block • Bio safety cabinet type – II, b2 class

c. Wet lab and Disease diagnosis laboratory

Wet laboratory (Area: 1000 sqft)

Disease Diagnosis laboratory (Area: 250 sqft)

d. Off campus facilitates of Tamil Nadu Dr. J. Jayalalithaa Fisheries University

ICAR-KRISHI VIGYAN KENDRA, Nagapattinam Dt.

Eartthen pond (2 nos – 110 sq.m each)

HDPE lined pond (4 nos-135 Sq.m each)

Aquaponic unit (200 sq.m)

6.4.5. CONDUCT OF PRACTICAL AND HANDS-ON-TRAINING:

Apart from the main campus and dedicated UG laboratories (as shown 6.4.4) in it, the institute has off campus facility of the University, at 20 kms distance from the College. Based on the subjects the students learn, they are being regularly taken to the aforesaid places for exposure and field level experience. All the departments conduct the regular practical classes for each course as per the course curriculum of the ICAR. In addition field exposure is provided through field visits to nearby hatcheries, farm ponds, reservoirs, etc specifically to ensure the exposure on the various farming practises and on the systems developed to carry out aquaculture. Practical are conducted in batches, in order to provide more exposure to individual student following the 'learning by doing' principle. The Department of Fish Process Engineering has off campus facility (Metro) at Keechankuppam, Nagapattinam.

Laboratory facilities of College of Fisheries Engineering, Nagapattinam

General Workshop

Mechanical Workshop

Physics lab

Chemistry lab

Engineering Drawing Hall

Surveying practical

Manufacturing Practices Lab

Electrical Engineering Lab

Computer lab

Aquacultural Engineering lab

Water Quality lab

Wet laboratory

Disease Diagnosis Laboratory

Ornamental fish culture unit

Off-campus facility - FPIF (Fish Processing Incubation Facility) of College of Fisheries Engineering, Nagapattinam

Chill Room Facility

Blast Freezer Facility

Cold Storage Facility

Modular Kitchen Facility

Baking unit

Food testing laboratory

Retort Processing Facility

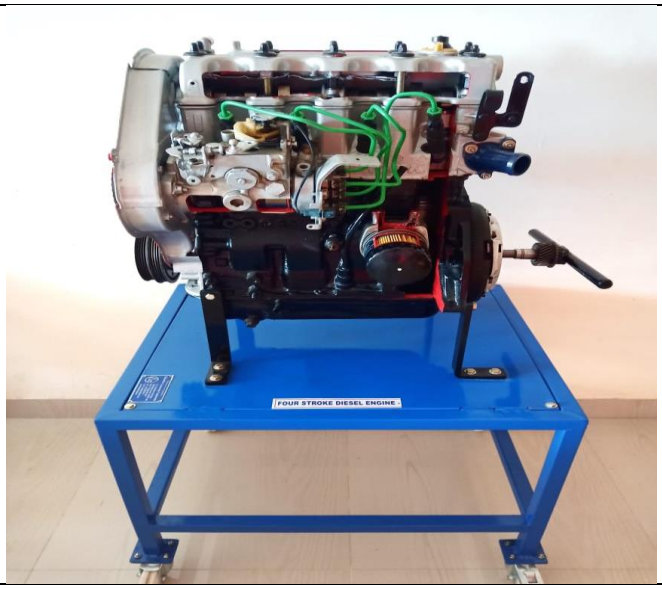
Solar Tunnel Drying Facility

CENTRAL INSTRUMENTATION FACILITY

S.No.	Equipment

1	Automatic Fat Extraction system	
2	Multi parameter Water quality meter	
3	Working Model and Principle of Hydrophore System Pump	

4	Aldis Lamp on Mains and Battery	
5	Fish Finder	
6	Portable anemometer	

7	Protein analyser	
8	Photo meter	
9	Four stroke engine working model	

All these facilities are having very good practical applications for the purpose of teaching and research. About 60% of the teaching is being done through practical and hands- on training utilizing the lab facilities available in the department. Group research problems are also being given to the UG students. In order to train them on the lab techniques, field visits to fish landing centres, fish markets, museums, research institutes are being arranged regularly based on the

course. Hands on demonstration are given using laboratory equipment, navigation equipment and seamanship appliances for both theory and practical classes. Central (ICAR institutes like ICAR-CIBA, ICAR-CMFRI etc.,) and State Government Institutional visits for students are also organized for getting practical exposure. Field visits to net mending yard, Boat building yard, fishing harbour, landing centre, and fishing villages are also being organized with students for gaining practical knowledge. Industrial visits to Fish processing plant and Ice making plant are also organized with students for gaining practical knowledge in processing sector. Sea trips are arranged for hands on demonstration in the operation of trawl net, gill net, trammel net, long line and cast net. Group projects are being given to the students to fabricate the fishing nets such as trawl net, gill net, trammel net, long line and cast net in the practical classes. Further, in the final year of UG degree programme, the students also undergo in-plant training on aquacultural activities and renowned fish processing industries wherein they receive the skills and training on the latest technologies in fish/shrimp farming and fish/shrimp processing.

6.4.6. SUPERVISION OF STUDENTS IN UG PROGRAMMES:

The Dean, Head of the institute supervises the faculty and student activities in the classrooms through internet enabled Closed-Circuit Television (CCTV). At present, there are dedicated CCTV cameras in all the four UG classrooms and also in the examination hall. With the help of this provision, the Dean ensures students and teachers time bound engagement in the class hours. Including the Dean, there are two Professors, one Associate Professor, eleven Assistant Professors and two Assistant Professors (in contractual basis) working in the six departments of the college and at present there are 118 UG students in the institute, thereby on an average there is a teaching faculty for every 10 UG students in the institute which is a sound learning environment and creates an effective monitoring platform for academic progress.

In addition to it, for every batch of UG students, two teaching faculty have been assigned as Student Coordinator (1 No.) and Counsellor (1 Nos.) respectively. In addition to it, there is a dedicated counselling time (which is also mentioned in the academic time table) in which the aforesaid teaching faculty will appraise the students' learning progress more importantly get their feedback about the teachers and their teaching skills. This counselling session is helping a lot in boosting both the teaching and learning process in the college.

6.4.7. FEEDBACK OF STAKEHOLDERS (STUDENTS, PARENTS, INDUSTRIES, EMPLOYERS, FARMERS etc.):

The academic section of the college assesses the feedback from the students regarding teaching and learning through questionnaire having set of tangible questions. Based on this,

teaching performance and lacunae if any and learning difficulties are assessed in quantifiable terms. The feedback proforma (Annexure A) are prepared in due consultation with the Dean of the college which are provided to the students. Academic section collects the feedback from last year students and their parents.

The In-Plant Training Co-ordinator collects the feedback from industries, farms, processing plants and employers of the students. Further, the Dean interacts with the students at regular interval for seeking feedback from the students. The Student's Placement and Career guidance cell functioning in the institute assesses the requirements of the employers and let the students as well as faculty know about the feedback of the employers.

6.4.8. STUDENT INTAKE AND ATTRITION IN THE PROGRAMME FOR LAST FIVE YEARS:

Name of the Degree	Actual student admitted in last five years					Attrition (%)				
	Y-1 (2015 -16)	Y-2 (2016 -17)	Y-3 (2017-18)	Y-4 (2018-19)	Y-5 (2019-20)	Y-1 (2015-16)	Y-2 (2016-17)	Y-3 (2017-18)	Y-4 (2018-19)	Y-5 (2019-20)
B.Tech. (Fisheries Engineering)	20	20	23	34	30	-	-	4.35 (1 No)	5.88 (2 Nos)	10 (3 Nos)

6.4.9. ICT APPLICATION IN CURRICULA DELIVERY:

ICT has also become integral to the teaching-learning interaction, through such approaches as replacing chalkboards with power-point presentations on LCD projectors, LED television monitors etc. The college classrooms are well equipped with audio-visual aids and regular lectures are delivered through power point presentations. Educational videos, short films, etc are included in the teaching – learning programme to convey concept with clarity. The college has wi-fi internet connectivity for staff as well students in all department laboratories, classrooms as well as in the institute's library. Teaching through ICT tools is being followed for effective teaching.

CERTIFICATE

I, the Dean in- charge **Dr. N. Manimehalai** hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding university.

11/10/2024

Signature of Dean of the College
With Date & Seal

DEAN
College of Fisheries Engineering
Tamil Nadu Dr.J.Jayalalithaa
Fisheries University
Nagapattinam - 02.

TAMIL NADU Dr. J. JAYALALITHAA FISHERIES UNIVERSITY

Self-Study Report for the College

Submitted by

College of Fisheries Engineering
Vettar River View Campus
Nagapattinam– 611 002
Tamil Nadu

6.5 Self-Study Report for the College:

The Colleges offering degree programmes as per recommendations of Deans' Committees/ VCI/ BSMA are eligible for ICAR accreditation. As per the format, the SSR of the Colleges is given below:

6.5.1. College Administration

6.5.1.1. College Dean's Office Establishment:

The Dean post has been sanctioned by the appropriate authority as per ICAR Model Act/UGC guidelines. Date of selection of present Dean, mode of selection, tenure, etc., are mentioned below. The staff and infrastructure/ facilities available in the Dean's office are also provided below.

Date of selection of the present Dean – 21.06.2021

Mode of Selection

For the appointment of Dean, application is called for from eligible candidates in the Daily Newspaper and in the university website. The applications received are scrutinized by a committee constituted by the University and the short listed candidates are interviewed by a committee including Vice Chancellor, Principal Secretary to the Government (Fisheries), Government nominee and external experts. The eligible candidate shall be appointed as the Dean of the College.

Tenure of the Dean – 3 years

Deans Office Staff details:

Sl.No	Name of the Post	Sanctioned strength	Staff in position	No. of Vacancy
Administrative Staff				
1.	Administrative Officer	1	1	-
2.	Assistant Accounts Officer	1	-	1
3.	Superintendent	2	2	-
4.	Assistant	3	3	-
5.	Junior Assistant	2	-	2
6.	Typist	4	1	3
7.	Steno – typist	2	2	-
8.	Lab Technician	2	1	1
9.	Lab Assistant	2	1	1
10.	Driver	2	2	-
11.	Assistant Engineer	1	1	-

	Total	**22**	**14**	**8**

Infrastructure facilities available in Deans Office:

i. Deans Chamber
ii. Steno room
iii. Conference Hall
iv. Deans Office
v. Education Technology Cell (ETC)
vi. Conference Hall
vii. Examination hall
viii. UG and PG classrooms

6.5.1.2. Monitoring Mechanism for Quality Education (on-line):

The college has internal quality assurance system which includes conduct of examinations, counselling and the education technology cell to meet the diverse needs of the stakeholders. The students are involved in all research and extension activities and receive awards and prizes for research, extension and extracurricular activities from national and International organizations.

6.5.1.3. CC/Board of Studies:

The Board of Studies (Fisheries) is conducted by the Faculty Dean (Fisheries Engineering) of the University with the following members.

- Dean of the Faculty – as Chairman of the Board of Studies
- Other Deans within the University
- All Directors of the University
- Controller of Examination
- Heads of the Departments of the concerned faculty
- Two elected representatives for Fisheries Engineering from Assistant Professors of the Faculty and
- Two experts for Fisheries Engineering and Two experts for Energy and Environmental Engineering in the concerned subject from outside the University to be nominated by the Vice-Chancellor

The term of office of the elected members and the experts outside the University shall be for three years with provision for another term.

The duty of the Board of Studies includes:

- To propose to the Academic Council, the courses of study for the various programmes of instructions offered in respective Faculty of the University.
- To propose to the Academic Council, the curricula of the University and advise the Academic Council in regard to all questions referred to it regarding the syllabi for different Under Graduate and Post Graduate programmes and all other functions referred to it by the Academic Council.
- To recommend to the Academic Council the establishment of new Departments, abolition / sub-division / or otherwise reconstitution of existing Departments and
- To exercise such other powers and to perform such other duties as directed by the Academic Council.
- The Board of Studies meets at least twice a year or as and when necessary at the discretion of the Chairman.

Date of conduct of Board of Studies (BOS) meetings for last five years and major recommendations:

Date of Conduct of BOS meetings	Recommendation made
I BOS 06.06.2017	• Inclusion of text books and references for all the courses. • Rearrangement of courses offered in B.E. (Fisheries Engineering) (between semester/ year/ department) based on subject hierarchy with minor modification in the content for the batch admitting during 2017-18 onwards. • Introduction of new non-credit Physical and National Service Scheme courses. • To start two numbers of post graduate degree programs • Introduction of 'students ready program' for BE (Fisheries Engineering) students
II BOS 02.02.2018	• Starting BE/B.Tech (Energy and Environmental Engineering) (self supporting course) • Starting M.Tech (Fish Process Engineering) and M.Tech (Aquacultural Engineering).
III BOS 06.07.2018	• To change the nomenclature of B.E (Fisheries Engineering) into B.Tech (Fisheries Engineering) as per the ICAR 5th Deans' Committee Recommendations. • Starting B.Tech (Food Technology) – proposed Syllabus with expert comments. • To implement the revised fee structure for the B.E (Fisheries Engineering) program. • To increase the student intake from 20 to 30 for the course B.E (Fisheries Engineering) at College of Fisheries Engineering

IV BOS 04.12.2018	• Starting of M.Tech (Aquacultural Engineering) –revised syllabus with expert comments-placed for approval. • Starting of M.Tech (Aquacultural Engineering) –revised syllabus with expert comments-placed for approval. • To develop evaluation criteria for the STUDENT READY programme in B.Tech (Fisheries Engineering). • Minor modification in B.Tech (Fisheries Engineering) syllabus.
V BOS 17.07.2018	• Interchange of VIII semester and VII semester subjects for B. Tech (Fisheries Engineering) 2016-17 batch only. • Rearrangement of VIII semester subjects to V and VI semesters for B. Tech (Fisheries Engineering) from 2017-18 batch onwards. • Minor modifications in current syllabus of B. Tech (Fisheries Engineering) • Introduction of new subjects in the current syllabus of B. Tech (Fisheries Engineering).
VI BOS 10.08.2020	• To approve the academic regulations of the following Under Graduate Engineering courses under Faculty of Fisheries Engineering -B.Tech (Energy and Environmental Engineering) -B.Tech (Fisheries Nautical Technology) • To ratify the M.Tech. (Aquacultural Engineering) and M.Tech. (Fish Process Engineering) admission strength from sanctioned strength of 3 to 4 • To extend the TNJFU PG student Stipend for M.Tech. (Aquacultural Engineering) and M.Tech. (Fish Process Engineering) students • To approve the B.Tech (Fisheries Nautical Technology) syllabus
VII BOS 21.10.2020	• Stipend for B.Tech. (Fisheries Engineering) students to attend RFWE, in-plant training, and all India tour from 2016-17 batch onwards. • Starting lateral entry of students with bridge courses as per AICTE norms - placed for discussion and decision • Concession of the wards for the Kashmiri migrants/ Kashmiri pandit/ Kashmiri Hindu families (non-migrants) lining in Kashmiri valley for admission in higher educational institutions as per AICTE norms - placed for approval • To start Ph.D. program in Fish Process Engineering with 2 student intake - proposed syllabus with expert comments - placed for approval • To modify credit of FPE 591 Master's Seminar- I and FPE 592 – Master's Seminar II from 0+1 to 1+0 in M.Tech (Fish Process Engineering) • To Modify The Credit of FPE 508 Waste Management Engineering In Fish Industries (1+2) As (2+1)– Placed For Approval

	• Request for modification of credit load in M.Tech (Aquacultural Engineering) courses AQE 591 Master's Seminar- I and AQE 592 – Master's Seminar II from 0+1 to 1+0 – placed for approval • Request for modification of course codes in M.Tech.(Aquacultural Engineering) – placed for approval • Creation of a Department for Under Graduate degree course of B.Tech. (Energy and Environmental Engineering) with required faculty position (on contract)- placed for approval • To modify the credit of Basic Engineering subjects from 2020-21 Academic year onwards -placed for approval • To introduce non-credit compulsory course in SWAYAM portal for students admitted in 2020-2021 onwards in the B.Tech degree programs - placed for approval

6.5.1.4. Anti-Ragging Cell:

In pursuance to the Judgement of the Hon'ble Supreme Court of India dated 08.05.2009 in Civil Appeal No. 887/2009, the University Grants Commission has framed "UGC Regulations on curbing the menace of ragging in higher educational institutions, 2009" which have been notified on 4thJuly, 2009 in the Gazette of India. The College followS this regulation and subsequent guidelines issued in the matter in letter and spirit. The details are given below.

An anti-ragging committee is constituted by the Institute with diverse mix of members from various fields namely the Superintendent of Police, Tahsildar, Press, Parents and student's representative from all batches of B.Tech (Fisheries Engineering), B.Tech (Energy and Environmental Engineering) and M.Tech programmes. The committee meets frequently and discuss on the measures taken to prevent ragging and untoward incidents related to ragging, if any.

- An anti-ragging squad is constituted under the Chairmanship of the Warden and the members (Teaching staff of the College) are assigned duty to prevent ragging at both the hostels (boys and girls) during college and out of office hours.
- The staff visit the hostel during day and night hours and monitor the activities of the students and submit a report to the Chairman (Dean of College) of anti-ragging committee..
- A College vehicle is put on service to facilitate faculty members to make surprise visits.
- An undertaking by parents and senior batch students stating that they will not indulge themselves in ragging of junior students is obtained.

- Constant vigil is through CCTV cameras in sensitive places like Library, Examination Hall, Class rooms, Hostel premises, etc.
- Fresher's are informed to lodge complaints / grievance in the complaint box located boys and girls hostels and in the College Annexure building.
- The National Anti-ragging help line toll free number (1800-180-5522), website address and phone numbers of anti-ragging committee members are clearly indicated in University website.
- The senior students are sensitized on the ill effects of ragging and suitable instructions are issued to all senior students through the concerned Students Coordinators.

6.5.1.5. Biological waste disposal facility:

Wastes (chemical, biological, radioactive, universal, and recyclable) are generated by a variety of research, services, maintenance, etc., and cleaning operations are undertaken in College. The details of waste disposal facilities are provided below.

The college has a committee with a Chairman and members (Annexure B) to look into the cleanliness and waste disposal of the campus. The waste generated in the departments and hostels are segregated into biodegradable and non-biodegradable waste.

The following Departments of our college generate chemical and biological waste, Department of Basic Sciences, Department of Fisheries Sciences, Department of Fish Process Engineering and Department of Aquacultural Engineering. The treatment of chemical, biological waste and recyclable waste is given below.

The sewage waste generated from hostel collected in a biogas generation unit and the biogas is being partially utilized for cooking of meals.

Chemical waste – Acid or alkali is neutralized and buried into deep pits.

Biological waste – Microbial pathogen from agar plates and fish processing waste killed in autoclave and discarded in pits - Biological sample is incinerated and buried. Waste generated form fish of processing is being discarded with the help of municipality services.

Radioactive waste – Not applicable

Universal and Recyclable waste

Papers / Cartons– Collected and sold for recycling
Plastics – Supplied to vendors for recycling
Glass / broken glass ware – Supplied to vendors for recycling
Biodegradable waste - supplied to corporation

6.5.1.6. Institutional Ethics Committee for Experiment on Animals:

In case of M.Tech research projects undertaking is being submitted for the approval of the University by the chairman of the advisory committee.

6.5.1.7. Committee for Prevention of Sexual Harassment of Women at Work Places:

The institution is adhering the sexual harassment of women at workplace (Prevention, Prohibition and Redressal Act, 2013) in letter and spirit. The details are given below.

The University has a 'Visaka' committee which is headed by Professor and Head of the University with four members.

The functions of the committee at College of Fisheries Engineering, Nagapattinam is:

- To provide a safe working environment.
- To mark attention at the workplace, the penal consequences of indulging in acts that may constitute sexual harassment and the composition of the Internal Complaints Committee.
- To conduct meetings, organize workshops and awareness programmes at regular intervals for sensitizing employees on the issues and implications of workplace sexual harassment.
- Treat sexual harassment as a misconduct under the service rules and initiate action for misconduct.
- Prevent discrimination and sexual harassment against women by promoting gender amity among students and employees.
- The Committee deals with issues relating to sexual harassment at College of Fisheries Engineering, Nagapattinam. A complaint of discrimination or sexual harassment may be lodged by the victim or a third party. A written complaint may be addressed to the Chairman of the Committee. If the complaint is made to any of the Committee members, they may forward it to the Chairman of the Committee against Sexual Harassment.

6.5.2. Faculty

6.5.2.1. Faculty Strength:

Mentioned below the faculty position (both in sanctioned and in-position) at the College.

Sl. No.	Sanctioned Faculty	Faculty in place	Sanctioned posts	Vacant position against sanctioned post	#Recommendations of V Deans' Committee
1	Professor	2(1 +1*)	2	1	7

2	Associate Professor	2(1+1**)	4	1	13
3	Assistant Professor	12 (11 + 1**)	15	3	18
	Total	**16**	**21**	**5**	**38**
Note: # As such there is no recommendation given in ICAR Vth Deans' committee report for B.Tech (Fisheries Engineering) degree program. However, we followed the recommendation mentioned for Agricultural Engineering					

* Promoted as Professor through Career Advancement Scheme

**Permanent teaching staff position has been filled up with contractual position of Assistant Professor (Contractual)

Sl. No.	Name of the Post	Sanctioned strength	Staff in position	No. of Vacancy	Remarks
Department of Energy and Environmental Engineering					
1.	Professor				
2.	Associate Professor				
3.	Assistant Professor (contractual)	5	2	3	-
	Total	5	2	3	Approved by XIVth Academic council

6.5.2.2. Faculty Profile (department wise):

The faculty profile in department wise is given in tabular form in **Annexure –I**

6.5.2.3. Credentials of the Faculty:

The college has employed competent faculty members qualified to fulfill the mission and accomplish its' goals. The highest qualification received by each faculty, related work experiences in the field, research publications, honours and awards, continuous documented excellence in teaching, or other demonstrated competencies and achievements that contribute to effective teaching and student learning outcomes are given in the **Annexure –I**.

The present department wise faculty profile of College of Fisheries Engineering is sufficient to meet the academic requirement of the College.

6.5.2.4. Technical and Supporting Staff:

The College has appointed sufficient technical/laboratory/farm staff to cater the need of practical and field experiments. The department wise distribution of technical, supporting and field staff are given in the tabular form below.

Sl. No	Name of the Post	Sanctioned strength	Staff in position	No. of Vacancy	V Deans' committee recommendation
Administrative Staff					
1.	Administrative Officer	1	1	-	
2.	Assistant Accounts Officer	1	-	1	
3.	Superintendent	2	2	-	
4.	Assistant	3	3	-	
5.	Junior Assistant	2	-	2	
6.	Typist	4	1	3	
7.	Steno – typist	2	2	-	
8.	Lab Technician	2	1	1	
9.	Lab Assistant	2	1	1	
10.	Driver	2	2	-	
11.	Assistant Engineer	1	1	-	
	Total	**22**	**14**	**8**	
Technical and Supporting Staff * (Contractuals)					
26.	Skipper	1	1	-	
27.	Boson	1	-	1	
28.	Engine Driver	1	1	-	
29.	Mechanic Grade I (Mechanical Engg.)	1	1	-	
30.	Mechanic Grade I(Electronics and communication)	1	-	1	
31.	Mechanic Grade II (Marine Diesel Mechanic)	2	2	-	
32.	Turner	2	1	1	
33.	Fitter	2	1	1	
34.	Welder	2	2	-	
35.	Deck-hand	3	3	-	
36.	Lab. Technician	4	4	-	
37.	Lab. Assistant	4	4	-	
38.	Fishermen / Fish Processing Technician	15	2	13	
39.	Drivers	2	2	-	
40.	Farm Manager	2	2	-	
41.	Farm/ Hatchery Technician	2	2	-	
42.	Hatchery Manager	2	2	-	
43.	Farm / Hatchery Supervisors	6	5	1	
44.	Electrician	1	-	1	

45.	Plumber	1	1	-	
46.	Helper	4	3	1	
47.	Caretakers	4	1	3	
48.	Cook	2	1	1	
49.	Sweeper cum scavenger	4	3	1	
50.	Security	10	9	1	
Total		**79**	**53**	**26**	
Total Non-Teaching Staff (Administrative Staff + Technical and Supporting Staff)		**101**	**67**	**34**	There is no standard recommendation for technical and supporting staffs
*Engaged on contractual basis in monthly consolidated pay					

The above mentioned technical and supporting staffs are engaged in the overall day to day management of the institute. The aforesaid staffs were also allocated to all the six departments for managing the departmental activities.

6.5.3. Learning resources:

Learning resources are texts, videos, software and other ICT enabled materials that teachers use to facilitate students to meet the expectations for learning defined by ICAR recommended curricula. Information on the learning resources are given under.

6.5.3.1. College Library (digital):

The information about location of the library, present staff position and availability of Wi-Fi, sufficient books and other reading materials, periodicals and research journals, internet with sufficient number of computers, seating capacity, employing the latest technology in library sciences, stocking arrangements, collection of volumes on different subjects, latest publications in the fields of relevant subjects, automation and user services through computer, opening hours, subscription of journals of national and international repute, national dailies, magazines, etc., of the College of Fisheries Engineering, Nagapattinam are given below.

Location of the library

The Green Library designed to get light through natural source of this Institute, unique of its kind was established during the year 2019 to cater to the fisheries technical needs of the user end groups of this State. The Library is housed in a two storied building located in the University main campus. The total area of the Library building is approximately **1503.2 m^2.** The Library functions have been well automated and entry into the library and book transaction is made possible with RFID Technology using smart card. Presently, the computerization activity of the

library has been revamped with specialized software KOHA a comprehensive package with built in library modules, suitable for the entire library functions. Besides this, this software is more compatible with RFID Technology, which is a total security transaction module. Number of CCTV cameras have been fixed at tangible points for surveillance. The Library is a part of CeRA consortium for e-journal access at discounted rates as determined by MHRD. This enables access to the world of nascent journals on line. All the departments of this college are all well connected it through IP network. The overall administrative control is vested with the Dean of this Institute and also overseen by the Library incharge (Er. C. Mercy Amrita, Assistant Professor, Department of Basic Engineering, College of Fisheries Engineering, Nagapattinam).

Library

Library inside view

Buildings:

Total area of the building : 1503.2 sq. m

1.	Book Section (Ground floor)	:	237 sq.m
2.	Periodical Section	:	200 sq.m
3.	Reference Section	:	27.75 sq.m
4.	Reprography	:	32.69 sq.m
5.	Circulation Section	:	56.55sq.m
6.	Farmers section	:	30.09sq.m
7.	Librarian Room	:	29.25sq.m
8.	Staircase	:	30.66sq.m
9.	Rest room – G Floor	:	73.38 sq.m
10.	Corridor – G.Floor	:	88 sq.m
11.	Digital Library	:	50.05 sq.m
12.	Computer Centre	:	147.09 sq.m

13.	Rest rooms – First Floor	:	73.38 sq.m
14.	Language Lab	:	215.93 sq.m
15.	Lift	:	5.76 sq.m
16.	Stair Case	:	30.66 sq.m
17.	Multimedia PC Room	:	76.68 sq. m
18.	Server Room	:	9.28 sq. m
19.	Corridor (F.floor)	:	88 sq. m

Present staff position:

1 Library Asst. : 1

2 Computer Operator : 1

3 Library Asst. : 1

4 Sweeper cum Scavenger : 1

Facilities:

- Books : 2353
- Reports, Manuals and others (Free publications) : 807
- Back volumes : Nil
- B.Tech Thesis : 40
- Newspaper : Nil
- Journals (Indian) : Nil
- Online journal access through CeRA : Yes
- CD-ROM : 86
- Computers : 3
- Photocopier-cum-network printer : 1
- Scanner : 1
- Wi-Fi Facility : Yes
- Plagiarism Tool : URKUND
- Seating capacity : 23

Online Journals, Books and Databases:

1	**Online Databases**		
	i)	Consortium for e-Resources in Agriculture (Full text journals)	
	ii)	Krishikosh: An Institutional Repository of Indian National Agricultural Research System (Full text theses of all SAUs and Research Institutes of ICAR)	
2	**Online/E-books**		1174 [CeRA]
3	**Journals Subscribed**		
	i)	Print journals	Nil
	ii)	Online journals through CeRA	OUP:24 SPRINGER:119+119 WILEY : 84
	iii	Print journals received as gratis	Nil

E-Resources:

The internet browsing facility is available in the library premises on the basis of a user account provided by the Unit of Information Technology (IT), College of Fisheries Engineering, Nagapattinam. The user can access the net facility though Captive Portal. There is also the provision of accessing the internet by the students and staff using their user ID.

Employing the latest technology in library - Automation and Digitization:

The Library of College of Fisheries Engineering, Nagapattinam has implemented automation of library at KOHA LMS under ICAR Development Grant 2019-20 under library strengthening section. The bibliographic database of the library's collection is well functioning through the OPAC module on Koha. All the library functions have been well automated and entry into the library and book transaction is made possible with RFID Technology using smart card. Presently, the computerization activity of the library has been revamped with KOHA specialized software, a comprehensive package with built in library modules suitable for the entire gamut of all library functions. Besides this, this software is more compatible with RFID Technology, which is a total security transaction module. CCTV security and surveillance System which helps in security of library resources as well as library management.

Self-service:

To borrow a book, just touch issue on the touch screen self-service machine and then it scans the borrower's biometric details. Instructions will then be displayed on the screen to borrow a single or multiple books. To return a book, just touch return button on the touch screen, place books in the machine and follow the instructions displayed on the screen.

Book Drop Box (24×7):

The book drop box has been placed at the entrance of the Library. This is to facilitate easy return of issued library books by just dropping the books inside the drop box instead of coming physically to the library to return the book.

Opening hours: 9:15 AM-5.00 PM [Monday-Saturday]

List of Previous Year Journals	
S.No	**Title of the journal**
1	Everymens Science
2	Aquaculture time
3	Indian Management
4	Fishing Chimes
5	Gujarat Journal of Extension Education
6	TCC Digest
7	Adventure
8	Foresight
9	IntrafishAqua
10	Malarum melanmai
11	Meenvala sudar
12	The Management Accountant
13	Rajagiri Journal of Social Development
14	Fisheries Technology
15	International Journal of English Research
16	International JOURNAL OF Structural Engineering
17	Journal of Polimer science & Technology
18	International Journal of Research in English and Technology
19	Supply chain pulse
20	International Journal of Physics
21	International journal of Civil Engineering
22	International journal of Mathematics
23	International journal of fisheries and aquatic studies
24	Asian Journal of bio science
25	Asian journalof animal sciences
26	Research journal of Animal husbanry
27	International journal of mobile computiing
28	Journal of advances in chemical technology
29	International journal of thermal enggineering
30	International journal of electrical machines and drives
31	International journal of Construction Engineering.
32	Vetenery science research journal

33	International journal of yoga
34	Journal of machine design
35	Journal of solar energy
36	Journal of automobile technology
37	Marine fisheries information source
38	International journal of Automobile engineering
39	JCADM
40	New india Samachar
41	IJVASR
42	Tne indianjournal of Animal sciences
43	Current Science
44	Seaweed research research and utilaisation
45	Kurushetra
46	Yogana
47	Asian journal of Microbiology,biotechnologyand environmental sciences
48	Pollution
49	IGNCA Journal of arts.
50	Indian journal of animal sciences
51	Aariviyal poonga
52	Jindal global law review
53	The bioscan
54	International journal of plant production
55	Journal of Traditional and folk practices
56	Green farming
57	international journal of tropical aquaculture
58	International journal of Agricultural engineering
59	International journal of Machine design
60	Sagar boodh
61	Agricultural extension journal
62	Science echnology and Management journal
63	Journal of environmental biology
64	Journal of animal health

List of Previous Year Magazines	
S.No	**Title of the Magazines**
1	Mathematics Today
2	Aquaculture spectrum
3	Electronics for you
4	Aqua international
5	Tamilarasu [English]
6	Tamilarasu [Tamil]
7	Makkal kalam
8	Tell me why
9	Readers Digest
10	PC Quest
11	Front line
12	Spinco Biotech
13	Biology today

14	Physics for you
15	Indian food industry
16	Data quest
17	Business Today
18	Women era
19	Chemistry today
20	Health and nutrition
21	MSSRF - Namaooru seithi
22	Teaching plus
23	Aqua feed
24	Competition Affairs
25	Aqua test
26	Aqua farm
27	The smart manager
28	Kizhaku vasl ulagam
29	Motor today
30	Uzhavar ulagam
31	Kadalar
32	Kalnadai velanmai
33	Makkal kalam
34	Kalvi today
35	Patchai boomi
36	Suyathozhil
37	KIIT REVIEW
38	Smart green
39	Crop view
40	Think corein
41	SKG Journal
42	Main ke kisan
43	Vihangama
44	Littoral
45	World aquaculutre
46	Supply chain pulse
47	Outlook
48	Mutram
49	Kalvi today
50	EDU Tracks
51	Coal quality testing
52	Matsya bharathi
53	JAIN Adventure
54	Agriculture today
55	Dairy plannerOn track

6.5.3.2. Laboratories, Workshops, and other research facilities

The **Laboratories, Workshops, and other research facilities**, etc., are available in the College with its numbers, space, specialty to conduct practical/hands on training are given as follows.

Facilities:

Sl. No.	Name of the unit		Area in sqft
1.	Basic Sciences laboratory		1420
	i	Physics Laboratory	710
	ii	Chemistry Laboratory	710
2.	Mechanical Workshop		5000
3.	Computer laboratory		1500
4.	General workshop		5000
	i	Surveying laboratory	710
	ii	Hydraulics and Fluid mechanics laboratory	710
	iii	Electrical and Electronics Engineering Laboratory	710
5.	Aquacultural Engineering laboratory		1400
6.	Fisheries Nautical and Marine Engineering laboratory		1400
7.	Energy park facility		1000
8.	Central Instrumentation facility		1400
9.	Energy and Environmental Engineering laboratory		710
10.	Fish Processing laboratory		2600
11.	Pre-processing hall of size 9.2m x 13.9m		1380
12.	Processing hall size of 12.35m x 13.9m		1840
13.	Flake ice plant (3 tonnes capacity) with ice store capacity of 7.5 tonnes		1000
14.	Cold storage capacity 20 tonnes (-20 ^{o}C)		1500
15.	NADP- Kayalagam Thanjavur Centre for Sustainable Aquaculture		750
16.	TNJFU Referral Lab Quality control lab Water quality laboratory Disease diagnosis laboratory		750
17.	Ornamental fish culture unit		710
18.	Wet laboratory		1000

Instruments/Facilities available in the College

2 HP Spiral Aerator

2 HP Paddle wheel Aerator

Water quality laboratory

Wet Laboratory

Disease diagnosis laboratory

Ornamental Fish culture laboratory

Chill room facility

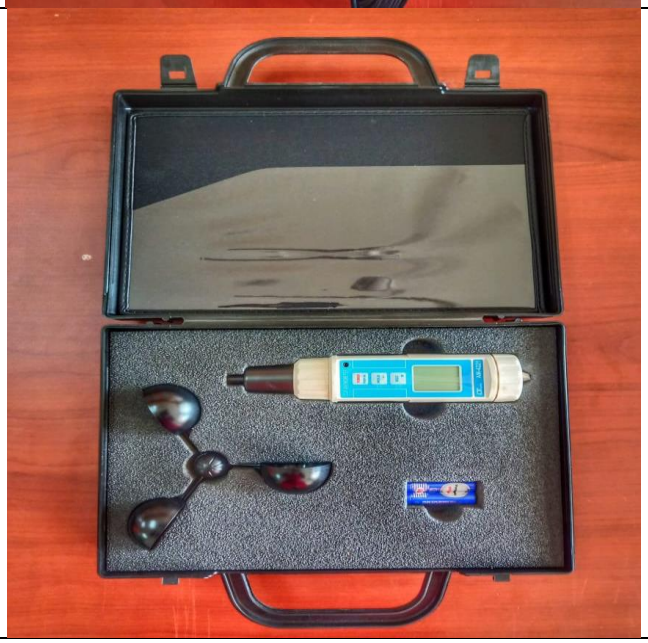
Blast freezer facility

Food testing laboratory

Retort processing facilty

Central Instrumentation Facility

S.No.	Equipment	
1	Automatic Fat Extraction system	
2	Multi parameter Water quality meter	
3	Working Model and Principle of Hydrophore System Pump	

4	Aldis Lamp on Mains and Battery		
5	Fish Finder		
6	Portable anemometer		

7	Protein analyser	
8	Photo meter	
9	Four stroke engine working model	

6.5.3.3. Student READY/ In-Plant Training / Internship / Experiential Learning Programmes:

College has not received any funding for the establishment of the ELP facility. However, as per ICAR guideline, in the Student READY programme students are undergoing In-plant attachment (for 8 weeks), Rural Fisheries Work Experience Prog. (for 8 weeks), Study Tour (in and outside State) (for 4 weeks), Student READY Experiential Module – project. The learning outcomes are detailed below

In-Plant Training (IPT):

In-Plant attachment activity at Jeya Industries and Engineering Private Ltd, Tuticorin

In-Plant attachment activity at Edhayam Frozen Foods Pvt. Ltd, Tuticorin

In – Plant activities at Britto Sea Food Exports (P) Ltd., Tuticorin

In-Plant Attactment at Avanti Frozen Food (P) Ltd., Andhra Pradesh

Rural Fisheries Work Experience (RFWE):

RFWE activity of B.Tech.(Fisheries Engineering) students at CeSA, Erode

RFWE activity at Hi-Tide Farm, Sirkazhi

RFWE programme at TNJFU demo farm, Tuticorin

RFWE programme at a shrimp farm in Vedharanyam, Nagapattinam

At TNJFU's CeSA, Prakkai, Kanniyakumari

At TNJFU's CeSA, BavaniSagar, Erode

At TNJFU's Center for Sustainable Aquaculture (CeSA), Barur, Krishnagiri

At KVK Sikkal demo farm, Nagapattinam

At TNJFU's Fish Processing Incubation Facility, Nagapattinam

At CoFE, TNJFU general workshop, Nagapattinam

Student READY Experiential Module- Project

Student READY Experiential Module for 20 credits.

The students have undergone a project related to fisheries engineering aspects given as follows:

Projects completed by 2015-16.Batch B.Tech.(Fisheries Engineering) students

- Development of mobile application for quality evaluation of extruded fish snack product
- IoT based real time temperature and pH monitoring for hatchery
- Development and characterization of edible film from red seaweed

- Development of perforated plate aeration system
- Development of biosensor for real-time monitoring of spoilage of packaged fishes
- Design and development of gear box for integrating paddle wheel aerator and propeller aspirator aerator for shrimp farming
- Development of a portable colorimeter for on-site determination of water quality in brackish water aquaculture
- Design and fabrication of dual operating multi feed pelletizer cum extruder for the production of fish feed
- Development of flexible and rollable piezoelectric nano-generator from shrimp shell waste
- Identification of fish freshness using artificial neural network in milk fish (*ChanosChanos*)
- Development of Egg collector for Common Carp Breeding
- Studies on thermal process optimization and validation of ready to cook shrimp in retort pouches
- Real-time detection of fish and its size on conveyor belt using OpenCV and Python in Raspberry Pi 3B+

<table>
<tr><th>S. No.</th><th>Title of the project</th><th>Guide name</th><th>Students name</th></tr>
<tr><td>1.</td><td>Development of mobile application for quality evaluation of extruded fish snack products</td><td>Dr. K. Rathnakumar
Professor and Dean i/c
Department of Fish Process Engineering</td><td>Mr. Pradeep R,

Mr.Aravind R,</td></tr>
<tr><td colspan="2"><u>Salient Findings:</u>
• The mobile application helps in producing the commercially acceptable fish added extruded snacks
• It aids the technician of Twin screw extruder for producing the snack without trail and error method
• It can be incorporated with Machine using AI, PLC, Embedded system technologies, so that one can make the machine itself intelligent enough to produce highly acceptable product.</td><td colspan="2">  </td></tr>
</table>

S. No.	Title of the project	Guide name	Students name
2.	IOT based real time temperature and pH monitoring for hatchery	Er. C. Mercy Amrita Assistant Professor Department of Basic Engineering	Ms. Jaya Bharathi S, Ms. Surya E

Salient Findings:

- Helps in determining the water quality for efficient monitoring of Hatcheries.
- The developed e-interface mobile application is a inbuilt application which helps in continuous monitoring of water quality parameters.
- The manual monitoring of water quality parameters in hatcheries does not give the exact values and the process are time consuming and need more man power but the developed e-interface mobile application gives accurate results in less time with less manpower.

Figure 3.15. Real Time Data in Blynk Mobile Application

3.15 explains the real time data in Blynk Mobile Application. The sensors se
cloud via wifi module and the data's are displayed in Android Mobile Applic

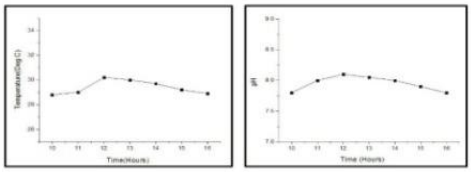


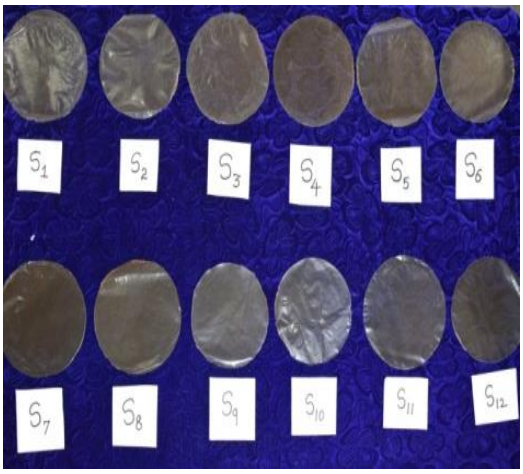
Figure 3.16.Data Analysis of Temperature and pH Sensor at Day 1

S. No.	Title of the project	Guide name	Students name
3.	Development and characteristics of biodegradable edible film from red seaweed *(Kappaphycusalvarezii)*	Dr. P. Karthickumar Assistant Professor Department of Fish Process Engineering	Mr.Rajasekar V

Salient Findings:

Food versus plants for plastics, which will lead to food price hikes and food crises. Hence, seaweed-based biofilms are the best alternative for synthetic plastic

- Require less time to degrade, Eco friendly, No toxicity
- Environmental Protection as it reduces the carbon footprint
- Bio-based biodegradable plastics find their applications in a variety of sectors including fibers, medical, industrial packaging and agriculture



S. No.	Title of the project	Guide name	Students name
4.	Development of perforated plate aeration system	Dr. Mohammad Tanveer Assistant Professor Department of Aquacultural Engineering	Ms.Abinaya Vijay VR, Mr.Pandiyaraja B

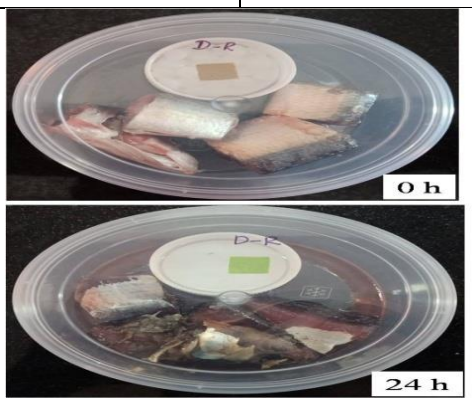
Salient Findings:

- An aeration system solely designed for small scale aquaculture (tank based)
- This system is economically cheaper compared to the other aerators available in the market
- This aerator develops more DO concentration and enhances productivity

S. No.	Title of the project	Guide name	Students name
5.	Development of biosensor for real-time monitoring of spoilage of packaged fishes	Dr. D. Kesavan Assistant Professor Department of Basic Sciences	Ms.VinothiniVaz M

Salient Findings:

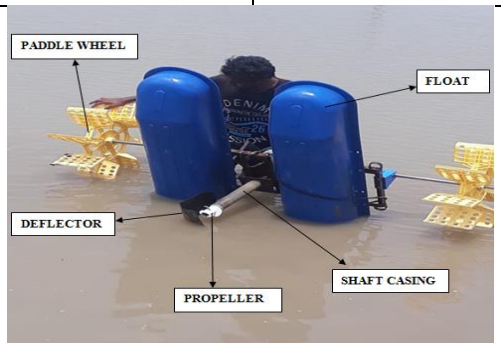
- The sensor indicated spoilage by exhibiting visible color change from brownish pink to yellowish green.
- The biosensor developed in this study is economical, biodegradable, edible, and efficient in spoilage detection.
- This economical biosensor can easily be adopted by retail sellers and exporters.



S. No.	Title of the project	Guide name	Students name
6.	Development of gearbox for the integration of paddlewheel and propeller aspirator aerators for shrimp farming	Mr. T. Anand Assistant Professor Department of Fisheries Sciences	Mr. Roshan RU, Ms.Harini R

Salient Findings:

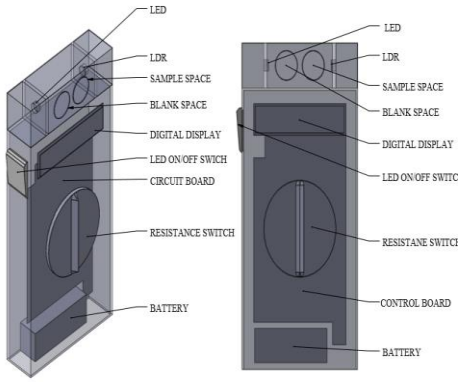
- This is a surface as well as sub-surface aerator
- This aerator supplies DO throughout the water column while culturing species like P.vannamei (Occupies the entire water body)
- It has a greater water spread area compared to regular paddle wheel aerator



S. No.	Title of the project	Guide name	Students name
7.	Development of a Portable Colorimeter for On-site Determination of Water Quality in Brackish Water Aquaculture	Dr. D. Kesavan Assistant Professor Department of Basic Sciences	Mr.Madhan K

Salient Findings:

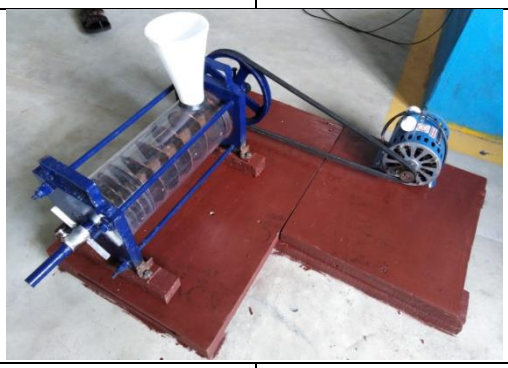
- Portable Colorimeters developed in this study are Accurate, Portable, Economical, User Friendly - can be easily adapted by the farmers
- Economical ~ Rs.300/- per colorimeter
- Developed Portable colorimeters with three different wavelengths - Blue- (420 to 500nm) (BPC), Yellow- (570 to 600nm) (YPC) , Red- (630 to 700nm) (RPC)



S. No.	Title of the project	Guide name	Students name
8.	Design and Fabrication of Dual Operating Feed Pelletizer cum Extruder for the production of Fish feed	Er. R. Regupathi Assistant Professor Department of Basic Engineering	Ms.Geethapriya RS Mr.Suriya A

Salient Findings:

- This is a portable feed pelletizer which can be easily adapted by the fish farmers
- It can be operated both manually and mechanically.
- Small scale farmers will be benefitted with this feed pelletizer



S. No.	Title of the project	Guide name	Students name
9.	Development of Flexible and Rollable Piezoelectric Nano-generator from Shrimp Shell Waste	Dr. M. Ramar Assistant Professor Department of Basic Sciences	Ms.Sabarmathi R

Salient Findings:

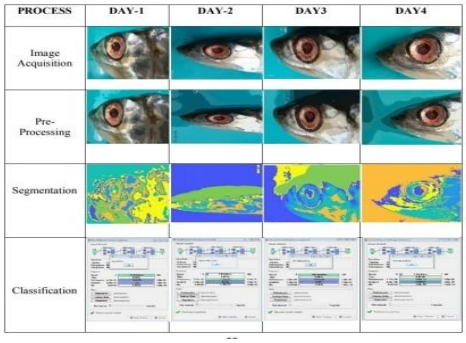
- Using this piezoelectric energy harvesting from the shrimp shells, unutilized power source can be used and energy could be produced from eco-friendly resource
- Additionally this energy source is biodegradable.
- This energy source produces the energy from the atmospheric mechanical movements and activities

S. No.	Title of the project	Guide name	Students name
10.	Identification of fish freshness using Artificial Neural Network in milk fish (chanoschanos)	Er. D. Babiyola Assistant Professor Department of Basic Engineering	Ms.Ragasudha R

Salient Findings:

- The image processing tool is used to analyze the freshness of the sea fish.
- The analysis will give the freshness of fish species
- It is easy to implement to reach the real time response

Table 4.2. Freshness Analysis Techniques



S. No.	Title of the project	Guide name	Students name
11.	Development of egg collectors for common carp breeding	Dr. M. Sivakumar Assistant Professor Department of Basic Engineering	Mr.Bharath S, Mr. Imran B

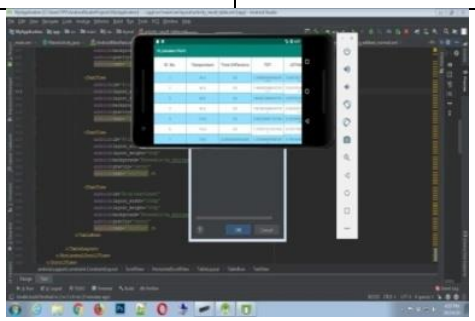
Salient Findings:

- This is used as egg collectors in carp hatcheries
- The eggs will be collected in a better way that the aquatic plant does
- An eco-friendly egg collector

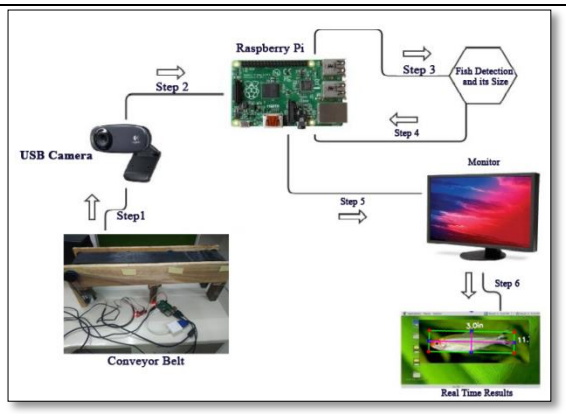
S. No.	Title of the project	Guide name	Students name
12.	Studies on thermal process optimization and validation of ready to cook shrimp in retort pouches	Dr. N. Manimehalai Associate Professor Department of Fish Process Engineering	Mr.Manivel K, Ms. Dharani Shrree RS

Salient Findings:

- Optimization of F0 value to preserve the original quality of shrimp
- A mobile app was developed to calculate the F0 value for thermal processing
- Mobile app will be useful in shrimp processing industry



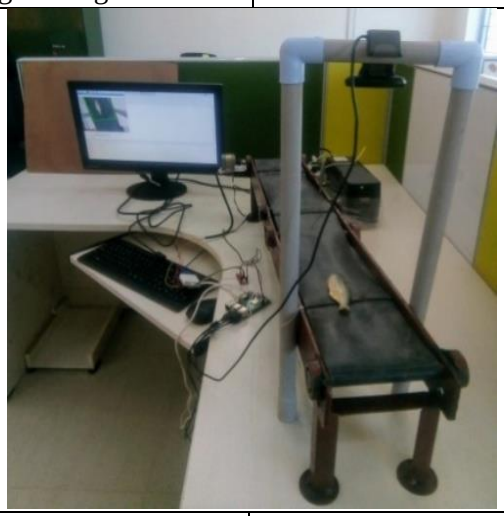
S. No.	Title of the project	Guide name	Students name
13.	Real-time detection of fish and its size on conveyor belt using Open CV and Python in Raspberry Pi 3B+	Dr. M. Kamalakannan Assistant Professor Department of Basic Sciences	Ms. Devadharshini K

Salient Findings: • To Control the Speed of the Conveyor Belt using Python – Raspberry Pi 3B+ module • To detect and tracking the fish object using OpenCV and Python – Raspberry Pi 3B+ module with SIFT technique • To measure the size of fish on the Conveyor Belt using Python – Raspberry Pi 3B+ module	

Projects completed by 2016-17Batch B.Tech.(Fisheries Engineering) students

- Designing a grader for *Penaeus vannamei* nursery
- IOT based real time dissolved oxygen and ammonium monitoring system for hatchery
- Development of conveying based fish sorting system
- Development and performance evaluation of engine driven refrigerated seawater system on board fishing vessels
- A study on economically feasible aquaponics system for common carp and foxtail amaranths
- Development of bio-piezoelectric nano-generator from crustacean shell waste
- Thermal Studies and Energy measurement of minimally processed shrimps in retort pouches.
- Optimisation of diffused aeration system configuration for nursery
- Design and development of smart solar drying system for fishes
- A study on aeration performance in different types of weirs Study on environmental impact assessment of machineries in aqua feed extrusion mill, recirculating aquaculture system and raceway system
- Real-Time Monitoring of Spoilage of Packaged Fish, Crab, and Shrimp Using Halochromic Sensors

S. No.	Title of the project	Guide name	Students name
1.	Designing a Grader for *PenaeusVannamei* Nursery	Mr. T. Anand Assistant professor & Head Department of Fisheries science	Ms. Jenifer Loumin S, Mr. Mohammad Imthathullah B
Salient Findings: • Designing a grader machine to obtain the uniform *Penaeus vannamei* seeds of 0.5 g with mesh dimensions of 44 × 8 mm from the nursery to the grow out pond • The model was developed such that it could be understood and operated by unskilled labour • It is low cost and easy to maintain			
S. No.	**Title of the project**	**Guide name**	**Students name**

2.	IOT Based real time dissolved oxygen system for hatchery	Er. C. Mercy Amrita Assistant professor Department of Basic Engineering	Ms. Shawmiya R, Ms.Vani R
Salient Findings: • Developing algorithm for interfacing Dissolved Oxygen and Total Ammonia Nitrogen and setting threshold limits • Interfacing these sensors with mobile application and alert farers about the farm condition. • The user would get a warning through sms, when the monitored value goes beyond threshold limits.			
S. No.	**Title of the project**	**Guide name**	**Students name**
3.	Development of Conveying Based Fish Sorting system	Dr. M. Kamalakannan Assistant professor Department of Basic Engineering	Ms.Ishwarya K
Salient Findings: • Controlling the speed of the conveyor belt using Python – Raspberry Pi 3B+ module. • Detecting and tracking the fish object using openCV and Python with SIFT technique. • Measuring the size of fish on conveyor belt and sortingusing Python – Raspberry Pi 3B+ module			
S. No.	**Title of the project**	**Guide name**	**Students name**
4.	Development of prototype of Engine driven Refrigerated Sea water system on Fishing vessel	Dr. K. Rathnakumar Professor & Head Department of Fish Process Engineering	Mr. Devaraj M, Mr.Gowthaman M

Salient Findings:

- Developing the small scale prototype model of RSW system (12 L capacity) resembling deep sea fishing boats.
- Calculating the refrigeration capacity, refrigeration effect, coefficient of performance quality of fish preserved in the developed system.
- Optimizing the performance characteristics for scaling up prototype to 5T capacity.

S. No.	Title of the project	Guide name	Students name
5.	A study on economically feasible aquaponics system for common carp	Dr. Mohammad Tanveer Associate Professor Department of Aquacultural Engineering	Ms. RajaniRagavi T, Ms. Sana K

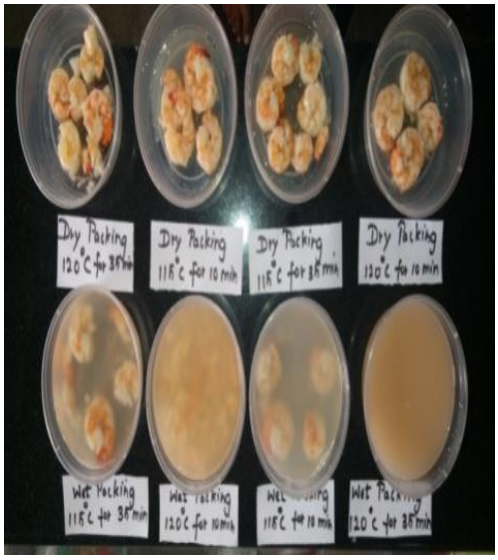
Salient Findings:

- Studying the feasibility of charcoal as a media in deep bed media based aquaponics system sizing biofilter for the chosen media
- Analyzing economic indicators of the developed system
- Sensitivity analysis was performed and found that fluctuation in commodity price affects the revenue generation than variable cost

S. No.	Title of the project	Guide name	Students name
6.	Thermal Studies and Energy measurement of minimally processed shrimps in retort pouches.	Dr. N. Manimehalai Associate Professor Department of Fish Process Engineering	Mr. Devasennan RM, Mr.Skadlin Rose PB

Salient Findings:

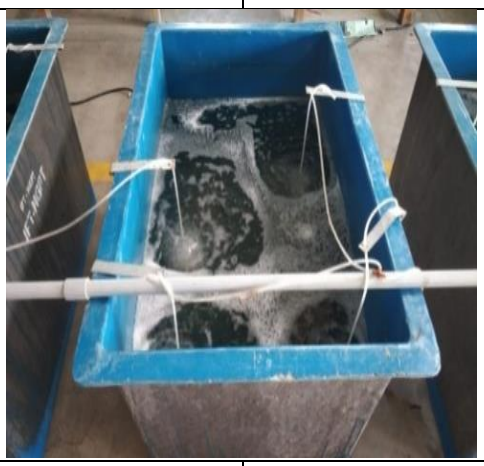
- The geometrical and thermal properties were found, to be helpful in designing new processing equipments.
- The effect of various heat penetration characteristics like F_0 value (i.e, sterilization value), F_h (i.e., heat penetration factor), j_h (i.e., heat lag factor), sensory characteristics like texture and percentage broken were found by considering parameters.
- The dry packing (115°C for 10 minutes) consumes less energy than dry packing (120°C for 10 minutes)



S. No.	Title of the project	Guide name	Students name
7.	Performance evaluation of diffused aeration system for aquaculture nursery system	Dr. M. Sivakumar Assistant Professor Department of Basic Engineering	Ms. Sivakrishna B, Mr. Nandhakumar L

Salient Findings:

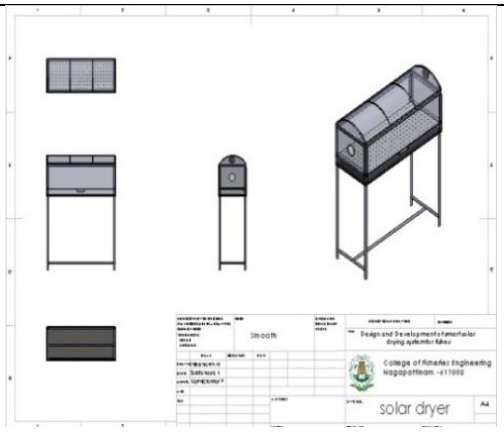
- Evaluating the performance of diffused aeration tubes with different orientation for nursery system
- The silicon tubes were preferred over other materials
- Spiral design is recommended for aeration purpose as it gives maximum oxygen transfer rate and energy consumption



S. No.	Title of the project	Guide name	Students name
8.	Design and development of smart solar drying system for fishes	Dr.P.Karthickumar Assistant professor Department of Fish Process Engineering	Ms.Subikshaya K, Mr. Thirushanth N

Salient Findings:

- Smart solar drying system facilitates easy monitoring than normal solar drying system
- Despite climatic change the dryer can maintain the product quantity and the user can monitor the parameters remotely via smart unit
- The cost and time effectiveness smart solar drying system can replace the unhygienic drying methods



S. No.	Title of the project	Guide name	Students name
9.	Study on aeration performance in different types of weirs	Er.R.Regupathi Assistant Professor Department of Basic Engineering	Ms. Jayameera PM

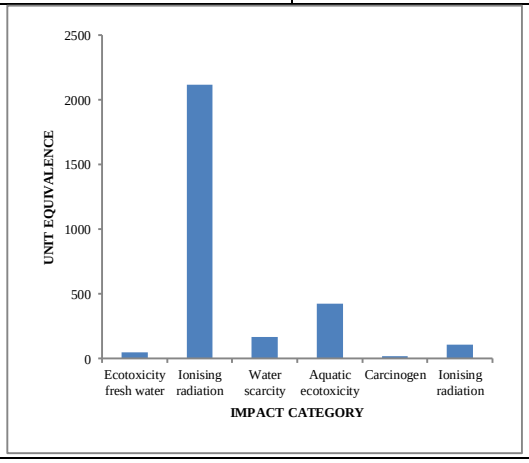
Salient Findings:

- Studying the potency of aeration using weirs in channels of aquafarms
- Overflow spillway weir resulted in maximum efficiency among the 5 different types of weirs
- The experimentation shows the high potential to adopt the technique in aquaculture systems

S. No.	Title of the project	Guide name	Students name
10.	Study on environmental impact assessment of machineries in aqua feed extrusion mill, recirculating aquaculture system and raceway system	Dr. Mohammad Tanveer Associate Professor Department of Aquacultural Engineering	Mr. Gokul Raj R

Salient Findings:

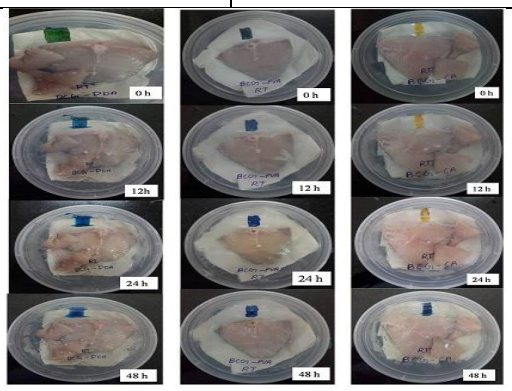
- Eco-toxicity fresh water and ionising radiation were more in Aqua Feed Extrusion Mill
- Aquatic eco-toxicity and water scarcity were more in Recirculating Aquaculture System (RAS)
- Carcinogen and ionising radiation were more in Indoor Raceway system



S. No.	Title of the project	Guide name	Students name
11.	Real-Time Monitoring of Spoilage of Packaged Fish, Crab, and Shrimp Using Halochromic Sensors	Dr.D.Kesavan Assistant professor Department of Basic Sciences	Ms. Kopperundevi SN, Ms. Padmavathi P

Salient Findings:

- Halochromic polymer thin film sensors were successfully prepared from materials of natural origin
- Excellent results for monitoring spoilage of packaged seer fish, crab meat and shrimp color
- The developed thin film sensors are biodegradable



a) BCG/PDA/S b) BCG/PVA c)BCG/CA

All India Tour (Study tour):

FES 403- (0+2) Study tour (In and outside state). The Students have under gone All India study tour for 25 days accompanied by permanent teaching staff of the College.

Student Ready program- 2017-18 batch B Tech (F.E.)

For the year 2020-21 (2017-18 batch B Tech (F.E.). students) during VII Semester. A special proposal was followed for the B.Tech (Fisheries Engineering) program as per contingent plan of the University to combat COVID-19 pandemic.

Student READY Experiential Module

For the year 2020-21 (2017-18 Batch B.Tech (Fisheries Engineering) students) during VIII Semester from January 2021 onwards students are undergoing regular project activities under Student READY Experiential Module

Due to COVID-19 students were engaged in the following manner

- Students were attached to Department of Aquacultural Engineering, and Fish Process Engineering to undergo the Skill Development Programmes in the fields of machinery development, mobile app development, aqua feeds preparation, analysis of water and soil quality parameters and preparation of value added fishery products respectively for 05 credit (25 marks, 25 days).

- Students were attached to the Aquaculture Engineering and Fish Process Engineering aspects to undergo the Experiential Learning Programme (ELP) in fish farming, shrimp farming and Fish processing activities for 15 credit for the remaining days of the semester.

6.5.3.4 Curricula Delivery through IT (smart class rooms/interactive board etc.):

The College is using smart class rooms/interactive boards, etc., for teaching and practical. Number of class rooms upgraded as smart class rooms.At present a total of four smart classrooms are equipped with teaching facilities in the college.

6.5.4. Student Development:

Student Development at the College directs its educational efforts at fostering the intellect and character of students by integrating in-class and co-curricular experiences. To accomplish this, the college provides a wide range of educational experiences through programmes and activities that complement and support the academic experience in the classroom.

6.5.4.1. Student Intake and Attrition:

The information about student intake and attrition, for the College as a whole in UG, PG category is provided in tabular form for last five years.

Name of the Degree	Actual student admitted in last five years					Attrition (%)				
	Y-1 (2015-16)	Y-2 (2016-17)	Y-3 (2017-18)	Y-4 (2018-19)	Y-5 (2019-20)	Y-1 (2015-16)	Y-2 (2016-17)	Y-3 (2017-18)	Y-4 (2018-19)	Y-5 (2019-20)
B.Tech. (Fisheries Engineering)	20	20	23	34	30	-	-	4.35 (1 No)	5.88 (2 Nos)	10 (3 Nos)
**B.Tech (Energy and Environmental Engineering)	-	-	-	-	15	-	-	-	-	7 (1no.)
**M.Tech (Aquaclutural Engineering)	-	-	-	-	4	-	-	-	-	-
**M.Tech (Fish Process Engineering)	-	-	-	-	4	-	-	-	-	-

** First batch started during the year 2019-20

6.5.4.2. Number of Students in Theory and Practical Classes:

Number of students sitting in a class for theory and practical, separately in tabular form for Degree Programme-wise are furnished below (complete list of academic programmes (UG and discipline wise for M.Tech) for which accreditation sought is also provided. The list should provide only programmes in which students are already passed out.

Degree	2015-16		2016-17		2017-18		2018-19		2019-20	
	Theory	Practicals	Theory	Practicals	Theory	Practicals	Theory	Practicals	Theory	Practicals
B.Tech (FE)	20	20	20	20	22	22*	32	32*	27	27*
B.Tech (Energy and Environmental Engineering)									15	15
M.Tech (Aquaclutural Engineering)									4	4
M.Tech (Fish Process Engineering)									4	4

*- Practicals conducted in two batches

6.5.4.3 Admission Process:

The complete mechanism of admission for UG, PG programmes, fee payment mechanism, registration procedure, academic schedule publication at the start of the semester, etc., are furnished hereunder.

UG admission:

Candidates shall be selected through online admission procedures on the basis of marks obtained in the Higher Secondary Course (10 + 2) examinations conducted by the Board of Higher Secondary Examinations, Tamil Nadu and as per the directions received from the Government of Tamil Nadu from time to time. A registration and orientation programme will be conducted by the Dean of the College for the benefit of the students joining the University for the first time. The students shall be allowed to register for the semester only after payment of fees given in the prospectus and production of clearance certificates from the hostel, library and such other places (other than first semester).

An academic calendar is prepared by the Students Coordinator of the batch for the benefit of the students. The academic calendar contains rules and regulations pertaining to payment of fee, fine levied in case of late payment. Exam pattern and evaluation procedures, hostel rules, etc., are also available in the calendar.

PG admission:

Candidates possessing four year B.Tech (Fisheries Engineering) degree are eligible for M.Tech. degree programme. The candidates are selected through online admission procedures. Common entrance examination is conducted to fill in the seats in M.Tech. degree programme. The selection of candidates for M.Tech. is done based on the marks obtained by the candidates which include marks in the entrance examination, OGPA in B.Tech degree, academic medals and work

experience. Eligible candidates as per their rank will be called for counselling. The selected candidates can choose anyone of the available discipline of their choice.

6.5.4.4. Conduct of Practical and Hands on Training:

A brief report on how the practical and hand-on-training is being conducted in different courses to meet the student satisfaction are furnished below.

The students are being provided hands-on-training either in the farm or field for various courses offered by the departments in different semesters. Further, the students are also taken to the private shrimp / fish farms, processing industries, fishing villages, government organizations, etc., for practical exposure. Guest lectures from eminent scientists, entrepreneurs, fish / shrimp farmers, fishermen, etc., are also arranged. In addition, students are also given assignments on various aspects of fisheries engineering and they have to collect and present it with the help of PowerPoint slides. Group discussions by the students in the practical classes are also conducted in order to have better understanding on the concepts. Their queries are answered by the course teachers / staff of the concerned department. The students are instructed to submit their record works at the end of the semester which will be evaluated by the course teacher.

6.5.4.5. Examination and Evaluation Process:

The evaluation of students' performance is a central task of College administration. A brief report on examination and evaluation process for UG and PG is given separately mentioning external/internal components. System of evaluation is also mentioned in the **Annexure II** for UG and PG degree programmes.

6.5.4.6. NCC/NSS/RVC Units:

A brief report of the existence and functioning of NCC/NSS/RVC units and how it is benefiting the student development is given below.

The NSS unit of the College of Fisheries Engineering, Nagapattinam established with an enrolled strength of 20 student volunteers. The aim of the unit is to motivate and train the student in social activities and management. As part of the curriculum every year students made to stay in a fishing village for performing National Service Scheme (NSS). During the stay they involved in the following activities in order to make them understand the life style of fisherman community.

(i) Cleaning the premises of the school where they stay
(ii) Awareness programme on hygienic handling of fish onboard
(iii) Awareness lecture on Importance of sea foods and value added fish products

(iv) Cleaning of fish landing center

(v) Tree plantation activity

(vi) General Health Care camp for women

(vii) General medical camp for villagers

(viii) Conduct of personality development program for the fisherman ward

(ix) Training on Navigation and Seamanship

(x) Awareness rally on " Ocean- Free from plastic"

(xi) Demonstration on first aid and sea safety in co-ordination with Alert Foundation along with Reliance Foundation-Information Service.

(xii) Demonstration of various value added fish products to self help group of fisherwomen

(xiii) Awareness programme on endangered marine animals

(xiv) Awareness lecture on "Responsible fishing methods to fishermen

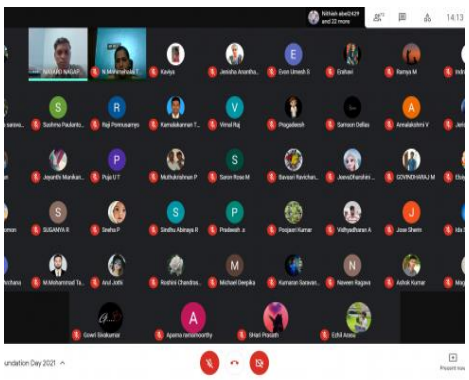
6.5.4.7. Language Laboratory:

It is required of any student to have a good command of the language for communication purposes, with clarity and accuracy being vital for effective and efficient communication. The language lab facilities available in the library are being utilized by the students. The students of College of Fisheries Engineering are also taken to the language laboratory in nearby Colleges and Centres.The undergraduate students are regularly sent for improving language proficiency.

6.5.4.8. Cultural Centre:

The college has Students' Association to empower student leaders to explore, celebrate, and educate the campus community about the diversity among them. The institute offers an inclusive and reflective space, multicultural programming, and support services that encourage positive interaction, academic persistence, and growth among students, faculty and staff. The few of such events are shown below:

Mass tree plantation event



University foundation day Programme

International Women's day celebration

Engineers' Day celebration

6.5.4.9. Personality Development:

Personality development programme is aimed at increasing employability of the students. The college has provisions for inclusion of functional grammar in Standard English, speaking skills, reasoning, group discussions interview skills, personal interviews, quantitative ability, verbal ability, mock tests and some special sessions to promote the personality development in the students.

A series of special programme is organized for the benefit of the students of the College to gain confidence, self-esteem, positive impact on one's communication skills and the way one sees the world. The some of the following aspects are being covered in regularly conducting personality development events

- Leadership in action
- Prime your thoughts to success
- Art of achieving
- Mock interview
- An effective CV writing
- Tips to improve Self Confidence
- Developing managerial skills for entrepreneurship
- Leadership and development

Personality development Program activities at College of Fisheries Engineering on 12.03.2020-13.03.2020


Personality development Program activities at College of Fisheries Engineering on 9.11.2019

6.5.5.Physical facilities:

6.5.5.1. Hostels:

The hostels are available for the College students for boys and girls, separately with its total capacity, students per room accommodated in each hostel, mess facility, drinking water, indoor games specially for girls, cleaning of hostel premises, transport facility, emergency medical facility, etc., are furnished hereunder.

College of Fisheries Engineering, Nagapattinam has two hostels, the boys' hostel and Ladies Hostel located in the main University campus at, Ngapattinam. The hostel accommodates 81 students comprising of 39 boys and 42 girls during the year 2019-2020.

Each hostel is administered by a Warden and Deputy Wardens (Boys and Girls). One assistant and a typist assist in the hostel administration. Apart from them two basic servants are maintaining the cleanliness of the hostel. Both boys and girls hostel have separate mess run on a 'Dividing system'. A Students Mess Manager assisted by mess representatives from each year maintains the mess under the direct supervision of the hostel administration. A student hostel secretary assisted by hostel representatives from each year maintains the respective hostel premises under the direct supervision of the hostel administration. Kitchens are available in both the hostels which are **Food Safety and Standards Authority of India** (FSSAI) certified and are properly maintained with no compromise in the quality of food.

The hostel amenity committee meets regularly to review the hostel accounts and mess rates and recommend necessary measures for the efficient and economical functioning of student mess.

A reading room facility with newspapers and periodicals (weekly and monthly) is available in the hostel campus for both hostels. Magazines provided in the reading room help the inmates to prepare for the civil services, ICAR and other national and international competitive examinations. Separate recreation halls are provided for watching TV programmes. The inmates are provided with indoor gymnasium facilities. One washing machine to the boy's hostel and One washing machines to the girl's hostel have been provided that enable them to spend more time on studies. Necessary recreational facilities have been provided to the boys and girls hostels by means of installing TV and DVD players with music systems. Both hostels provided with R.O. drinking water. A throw ball playground facility has been established.

Gents hostel

Ladies Hostel

Accommodation:

Available rooms	Capacity	Enrolled
13+1*	39	39

1*-room allotted for deputy warden

Status of Girls Hostel Accommodation:

Available rooms	Capacity	Enrolled
14	42	42

6.5.5.2. Examination hall:

The availability of number of examination halls, its capacity etc. for the College are given below.

The College has one examination hall with a seating capacity of 100.

6.5.5.3. Sports and Recreation Facilities:

Indoor gymnasium of 750 sqft., volley ball court of 800 sqft.and an open play ground of 1,73,000 sq.ft for practicing sports are available at College of Fisheries Engineering for the College students.

Gymnasium

Sl No	Equipment
1	Fat burner
2	Chest pressing machine
3	PEC DECK machine
4	Lat Pulldown machine
5	Roman chair
6	Leg press machine
7	Leg abduction machine

6.5.5.4. Auditorium:

The College has an auditorium with an approximate seating capacity of 350 constructed during 2020. Cultural events, functions and other programmes are being taken place in the auditorium very frequently. The auditorium has well equipped with audio visual facilities.

Auditorium

6.5.5.5. Exhibition Hall/Museum:

The college has an Exhibition Hall and special events are being conducted in it.

6.5.6. Research Facilities:

6.5.6.1. Postgraduate Laboratories and Equipments:

The department wise laboratories and equipment are housed in individual laboratory in the College of Fisheries Engineering and a Central Instrumentation facilty is also available with the College along with other research unit are furnished below.

Equipment available under each Department:

S. No.	Name of the equipment	Quantity
1	Spectrometer	1
2	Travelling microscope	1
3	Reading telescope	1
4	Lawrence half shade polarimeter	1
5	UV-visible spectrophotometer	4 Nos.
6	Digital potentiometer	1
7	Digital conductivity meter	1

8	Vernier microscope	4
9	Spherical calorimeter	1
10	Newton's ring apparatus	1
11	Vernier caliper	4
12	Lee's disc apparatus	4
13	Torsion pendulum	1
14	Poisellu's viscosity apparatus	2
15	Optical microscopes	1
16	Light microscope	1
17	Digital microscope	1
18	Hot air oven	1
19	Incubator	1
20	Flame photometer	1
21	Muffle furnace	1
22	Hydrostatic bench	1
2)	**Dept. of Basic Engineering**	
1	Nagmani Make All Gear Head Lathe with Accessories	1
2	Nikil Make Heavy Duty Centre Lathe (7 Feet) with Accessories	1
3	Nikil Make Medium Duty Centre Lathe (6 Feet) with Accessories	1
4	RKMM Make Universal Milling Machine with Accessories	1
5	Hydraulic Power Hacksaw Machine	1
6	Bench type Grinding Machine (dated)	1
7	Shaping Machine (18") with Accessories	1
8	Slotting Machine (10 -250 mm Stroke) with Accessories	1
9	Radial Drilling Machine with auto feed (40mm drilling capacity)	1
10	Dumpy Level	4
11	Theodolite	4
12	Ranging Rod	20
13	Offset Rod 3 meters	20
14	Brinell Hardness Testing Machine	1
15	Rockwell Hardness Testing Machine	1
16	Impact Testing Machine	1
17	Compression testing machine	1

18	Spring testing machine (Tensile testing Machine)	1
19	Compression testing machine	1
20	Function Generator (1Mhz)	1
21	Dual Trace Oscilloscope(1Mhz)	1
22	RPS(DC Single variable type)	1
23	Trainer kit - Microprocessor	1
24	Galvanometer DC	1
25	Trainer - LVDT	1
26	Transformer 3phase 415V	1
27	Rectifier Enclosure & accessories	1
28	DC Series Motor 5HP 220V	1
29	DC Shunt Motor 5HP 220V	1
30	AC Squirrel Cage Induction Motor	1
31	Computer Desktop	22
32	Printer –HP laser	1
33	Printer –Canon Laser	1
34	Printer – Epson Color printer	1
35	Printer –Epson Photo printer	1
36	Printer - Samsung laser printer	1
37	Printer - Samsung (ZDTGBJA3001E4H)	1
38	HP Laser jet 1020+Printer (12A Toner cartridge)	1
39	UPS - 10 KVA online UPS with batteries	1
40	Wifi facility	1
3)	**Department of Aquacultural Engineering**	
1	Permeability apparatus	1
2	Mechanical sieve shaker	1
3	Liquid limit apparatus	1
4	Plastic limit apparatus	1
5	Shrinkage limit apparatus	1
6	Pycnometer	4
7	Specific gravity bottle	4
8	Total station	1
9	Global positioning system (gps)	1
10	2 HP Paddle Wheel Aerator	1
11	2 HP Spiral Aerator	1

12	Arc GIS software	20 users
13	YSI DO meter	1
14	Water quality Multiparameter	1
15	Photometer	1
4)	**Department of Fish Process Engineering**	
1	Retort processing machine	1
2	Tray drier	1
3	Freeze drier	1
4	Planetary mixer	1
5	Meat mincer	1
6	Pulverizer – Hammer mill	1
7	Pulverizer – Plate mill	1
8	Ribbon blender	1
9	Microwave oven	1
10	Air fryer	1
11	Pasta making machine	1
12	Deep frying unit	1
13	Foot operated sealer	1
14	Vacuum sealer	1
15	Induction sealer	1
16	Retort pouch sealing machine	1
17	Twin Screw extruder (under process)	1
18	Flavour coater	1
19	Form- Fill – Seal machine (Fish pickle)	1
20	Form fill seal machine (Dry fish)	1
21	Hot air oven	1
22	Vacuum oven	1
23	Muffle furnace	1
24	Sieve analyzer	1
25	pH meter	1
26	Digital melting point apparatus	1
27	Penetrometer	1
28	Water bath apparatus	1
29	Autoclave	1
30	Centrifuge	1
31	Double distillation Unit	1

32	Laminar Flow Chamber	1
33	Incubator	1
5)	**Department of Fisheries Nautical and Marine Engineering**	
1	Garmin GPS	1
2	Fish Finder	1
3	Echo Map	1
4	Anemometer	1
5	Hydrophore system Pump	1
6)	**Department of Fisheries Sciences**	
1	Refractometer	1
2	Electronic top loading balance	1
3	Digital conductivity TDS meter	1
4	All quarts double distillation unit	1
5	Macroblock digestion system for automatic protein /nitrogen system	1
6	High Speed Cooling Centrifuge	1
7	Incubator	1
8	Autoclave	1
9	Muffle Furnace	1
10	BOD Incubator	1
11	Spectrophotometer	1
12	Flame Photometer	1
13	Automatic fibre estimation systems	1
14	Multiprobe system	1
15	Fat extraction system	1
16	Scrubber for protein / nitrogen system	1
17	Hand held digital colony counter	1
18	Automatic Nitrogen/Protein estimation system	1
19	Bio photometer	1
20	Refrigerated Centrifuge	1
21	Thermal cycler	1
22	GEL DOC	1
23	Deep freezer horizontal	1
24	Analytical Balance	1
25	Vortex shaker	1
26	Laminar Air Flow	1
27	Refrigerator	1
28	Microwave oven	1
29	Mini Centrifuge	1
30	ELTEK vortex mixer & Hot plate with magnetic stirrer	1
31	Inlab Incubator	1
32	Digital Heating block	1
33	Bio safety cabinet type – II, b2 class	1

6.5.6.2. Research Contingency:

There is no separate allotment of research contingency for each department. The expenditure is met out from the institutional recurring contingency.

PROJECTS OPERATED/IN OPERATION in College of Fisheries Engineering

Sl. No.	Title of the Project	Funding agency	Duration	Budget (₹ in lakh)	Principal Investigator
1.	Development and demonstration of innovative fisheries engineering inventions for the product maximization in fisheries industries	State Planning Commission, Tamil Nadu State	2017-2020	75.2	Dr. M. Sivakumar
2.	Development, demonstration and dissemination of Solar energy operated aerators in shrimp farms	ICAR - Extramural	2018-2019	21.25	Er. D. Babiyola Assistant Professor
3	Establishment of fisheries technopark cum fish processing technology business incubation centre	NADP	2017-18	114.65	Dr. K. Rathnakumar
4	Creating a Platform "Kayalagam" –The Future Store for Amplification of Marketing of Diversified Fish Products in Tamil Nadu	NADP	2018-20	30.83	Dr. P. Karthickumar Nagapattinam component

6.5.7. Outcome/Output:

6.5.7.1. Student Performance in National Examinations:

A detailed information in tabular form about student performance in JRF/SRF/NET/ARS/and other national examinations for last five years are furnished below.

Sl. No.	*Passed out	JRF	**Non JRF	Total
1.	2018-19	0	8	8
2.	2019-20	0	6 (3^a+ 2^b+1^c)	6

*Only mentioned batches passed out

**8 Students took admission in M.Tech (Aquacultural Engineering) and M.Tech (Fish process Engineering) programs through an entrance test conducted by Tamil Nadu Dr. J. Jayalalithaa Fisheries University, Nagapattinam

a- 3 students took admission in M.Tech (Aquacultural Engineering) and M.Tech (Fish process Engineering) programs through an entrance test conducted by Tamil Nadu Dr. J. Jayalalithaa Fisheries University

b- 2 students in M.Tech (Aquacultural Engineering) programs through an entrance test conducted by Assam University

c- 1 took admission in M.Tech (Food Process Engineering) entrance conducted by Karunya University Coimbatore, TN

6.5.7.2. Students Placement Profile:

Provided detailed information in tabular form about student performance in ARS/and other national examinations/State level examinations or equivalent. Year wise placement profile is also provided.

The students' placement and career guidance cell of College of Fisheries Engineering has been working since 2019. It arranges for the conduct of interview for the selection of fisheries engineering graduates for various corporate companies. The cell maintains a database of fisheries engineering graduates. The cell collects and disseminates higher education information available from various sources for the welfare of the student community. The cell regularly sharing the job availability details to current and passed out students through email and social media. It also assists the industry as well as other organizations to source the fisheries professionals for their company by providing passed out students' bio-data.

The graduates are well placed in various central and state organizations, universities and private sectors. Some of them have transformed into big entrepreneurs and providing job opportunities for a fairly large number of people.

Students Placement Profile for the last five years (two passed out batches)

Particulars	2018-19	2019-20
Students passed out	20	20
Higher studies	8	6
Government Employment	1+*2	-
Private Employment	5	6
Civil /Banking services exam preparation	4	8
Job seekers	-	-

* On contract Govt. Organization

6.5.7.3. Awards/Recognitions/Certificates:

The information on awards/recognitions/certificates in tabular form for last five years separately for students and faculty are furnished below.

Awards received by Staff:

S.No.	Name of Staff	Awards
1.	**Dr.N.Manimehalai**	1. Won third prize in KRITAGYA – A National Level Agtech Hackathonconducted by ICAR for innovative concept presentation during 2021 2. Best Research Paper (Oral) Presentation Award in National conference on Agricultural Scientific Tamil conducted by Tamil Nadu Fisheries University during 2017
2.	**Dr. Mohd. Tanveer**	1. IDEATHON Poster Competition conducted by ICAR-CIFE-Mumbai on 12.11.2020 awarded **Third Prize** for the poster entitled "**Smart Aqua Feeders**" 2. Awarded **2nd Prize** -Conceptual approach to estimate the flow rate and sizing of trickling filter in MECH 'O' FEST 2K18, A National Level Technical Symposium at EGS Pillay Engineering College Nagapattinam on 17.02.2018 3. Awarded **1st Position** -World Science Day- Guided Amrita Vidyalayam students (Presented a Working model on Aquaponics System) on Science Day Celebration at CoFE on 26.02.2018
3.	**Mr.T.Anand**	1. Best Paper Award Agricultural ScientificTamil Society, New Delhi Dec'20 & 21 2020For presenting research paper in the 6th National Conference on Agricultural Scientific Tamil 2. Appreciation Award TNJFU, Nagapattinam24th June 2019 For coordinating the Farmers' meet and farm tour at WAS- APA 2019 held at Chennai during 19thto 21st of June 2019
4.	**Er. D. Babiyola**	**Best paper award** for the paper, 2016. Thermal Aware Routing protocol for body Area Networks: A Survey, International Journal of Computer science and Information Technology Research.
5.	**Dr.D.Kesavan**	1. **Best Paper Award (Oral), 2020**, Virtual International Conference on Food and Agriculture Science and Technology, Salem, India, 31.10.2020. 2. **Best Paper Award (Oral), 2020**, 5th National Conference on Agricultural ScientificTamil, 9-10.10.2020, TNAU, Coimbatore, India. 3. **Junior Teacher Research Fellowship, 2019**, Tamil Nadu Dr. J. Jayalalithaa FisheriesUniversity, Nagapattinam, India. 4. **Best Paper Award (Oral), 2018**, 4th National Conference on Agricultural ScientificTamil, 19-

		20.11.2018, IFPGS, Chennai, India. 5. **Best Paper Award (Poster), 2018**, International Conference on Recent Advances inFood Processing Technology, Thanjavur, India. 6. **Outstanding Reviewer Award, 2018**, Carbohydrate Polymers, Elsevier, Netherlands. 7. **Best Teaching Faculty Award, 2017**, Tamil Nadu Fisheries University, Nagapattinam,India. 8. **Outstanding Reviewer Award, 2017**, Carbohydrate Polymers, Elsevier, Netherlands. 9. **Young Scientist Award**, Chemical Science Review and Letters, 2016, India.
6.	**Er. S. Monikandon**	1. Best oral presentation Award Virtual International Conference on Food and Agriculture Science and Technology, October 2020. 2. Co-chair for a technical session in 6th Indian young co-technical Engineer's conference, NIT, Trichy on 10.03.2017 to 11.03.2017. 3. Young scientist Award, AUFAU International Award, India 2016. 4. Best oral presentation Award 2nd National conference on Fundamental and Applied Chemistry, June 2016.
7.	**Dr. M. Ramar**	**1. Best Oral Paper Presentation Award**, Category of Energy, entitled on *Recycled crab shell waste as piezoelectric nano-generator*, "Virtual International Conference on Materials for Food, Energy, Environment, and Health", Aufau Science Forum, Salem, India, 27.06.2021 and 28.06.2021.
8.	**Er.C.Mercy Amrita**	1. Best paper award for the paper, 2016. Thermal Aware Routing protocol for body Area Networks : A Survey, International Journal of Computer science and Information Technology Research.
9.	**Dr. M.Sivakumar**	1. Best Teaching Staff Award 2017 from TNJFU

6.5.7.4 Employability:

The students are given the skill development classes for English proficiency, inter and intra personal communication, public speaking, presentation skills and scientific writing. Every Thursday, special programmes on personality development are being arranged for the benefit of students. Students are also trained for facing the interview and gain employment through campus interview programme. They are given mock examination for appearing in ICAR – JRF and other competitive examinations.

The students are given career guidance through placement Cell, Student Coordinators and Counsellors for getting suitable placement. Every year campus interviews are arranged in the College premises for selecting the interested candidates.

During the Students' READY programme, the final year students are being provided with hands on training in ornamental fish farming, freshwater fish farming, mariculture, pond preparation, water quality management, fish processing, fishing technology are given for period of six under Experiential Learning Programmes (ELP) at campus. Besides, hands on training and practical exposure on fish processing, aquacultural engineering under In-Plant attachment programmes.

6.5.8. SSR of the College must have the SSR of all its Degree Programmes (following section 6.4), then the report of the Colleges shall be considered.

(In section 6.4 B.Tech (Fisheries Engineering) degree program details have been given as two batches (2015-16 and 2016-17) have been passed out. The details of B.Tech (EEE) and M.Tech Fish Process Engineering and Aquacultural Engineering has not been provided as the first batch of B.Tech (EEE) and both the M.Tech programmes are in II year, not passed out)

6.5.9. Certificate (Applicable when SSR is submitted for Programmes & College).

I, the Dean in-charge, **Dr. N. Manimehalai,** hereby certify that the information contained in Sections 6.4 and Section 6.5.1 to 6.5.7.4 are furnished as per the records available in the college and degree awarding university.

11/10/2024

Signature of Dean of the college with Date & Seal

DEAN
College of Fisheries Engineering
Tamil Nadu Dr.J.Jayalalithaa
Fisheries University
Nagapattinam - 02.

ANNEXURE –I

FACULTY PROFILE

1) Dr.N.Manimehalai, Professor & Head, Dean (Additional Incharge)

Individual Biodata

Name : Dr. N. Manimehalai

Designation : Professor& Head
Dean Incharge (Additional Charge)

: No: 73, Mothi Villa
MMG Nagar
Karaikal - 609 609

Contact

Telephone (O) : -
Telephone (R) : -
Mobile : 9841245546
Email : manimehalai@tnfu.ac.in

Qualification : B.E. (Agrl. Engg.), M.E.(Agrl. Engg.),
Ph.D (Food Process Engineering)

Field of Specialization : Food Process Engineering

Major : Fish Process Engineering

Specializing field : Fish Processing Gadget Design Technology for coated fish products Retort Processing

Experience (in years) : 17 years

Current projects : 3

Sl. No	Title of the Sub Project	Year	PI & Co- PI of the Project	Funds (in Rs)	Funding Agency
1	Development and demonstration of innovative fisheries engineering interventions for the production maximization in fisheries industries in Tamil Nadu Sub projects	2017- 2020	Dr. S. Balasubramanian **Dr. N. Manimehalai**		Tamil Nadu Innovation Initiative

	Development of power operated fish dressing device Design of low cost fish processing machine Development of small scale automatic integrated powder making unit using fish/food waste		Dr. P. Karthickumar Dr.S. Balasubramanian Dr. P. Karthickumar Dr. N. Manimehalai Dr. S. Balasubramanian **Dr. N. Manimehalai** Dr. M. Sivakumar Dr. D. Kesavan Dr. P. Karthickumar	10,00,000 13,50,000 30,60,000	
2	Design and development of crab meat pasteurization system	2019-2021	Dr. N.Manimehalai Ms. R. Harini (Student) Dr. K. Rathnakumar Dr. M.Kamalakkannan	Student Project	TNJFU
3	Design of dewatering system for surimi	2019-2021	Dr. N.Manimehalai Ms. M. Vinothini Vaz.(Student) Dr. K. Rathnakumar Dr. M.Kamalakkannan	Student Project	TNJFU

Completed projects : 2

Sl. No	Title of the Sub Project	Year	PI & Co- PI of the Project	Funds (in Rs)	Funding Agency
1	Establishment of Fisheries Techno Park cum Fish Processing Technology Business Incubation Centre	2017-2018	Dr.S.Balasubramanian Dr. K. Rathnakumar Dr. P. Karthickumar Dr. N. Manimehalai (Co-PI)	1,14,65,000	NADP
2	Role of edible coating in extending the shelf life of seer (*Scomberomorousgutt atus*) fish	2016-2017	Dr. N. Manimehalai	1,00,000	TNFU-URP

Research publications (max – 10):

1. **Manimehalai, N.**, Rajesh, G., Balasubramanian, S. and Durga Devi, J. 2018. Gelatin Based Edible Coating: Preservation Technique for Seer (*Scomberomorus guttatus*) Fish Slices. The Indian Journal of Nutrition *Vol.55 (2), April - June 2018.* ISSN: 0022-3174; eISSN: 2348-621X: *DOI:10.21048/ijnd.2018.55.2.18121* : NAAS: 4.23 pg no: 177 - 186
2. Anusha, K. and **N.Manimehalai** 2015. Optimization of Process Parameters for the Production of Vegetable Chutney Powder for its Maximum Nutrient Content. *Agricultural Engineering (* 4): 57 – 64

3. Asha, KR. and N. **Manimehalai** 2015. Storage Stability studies on Vitamin a Fortified Sunflower (*Helianthus annuus*) oil. *Agricultural Engineering (*4): 19 – 26
4. Ankita, P., G. Sarathchandra, **N. Manimehalai,** and Athmaselvi, K.A. 2015. Assessment of microbial quality and aflatoxin levels of paneer marketed in Chennai, India. *The international journal of Science and technology*, 3(4): 119-125.
5. **Manimehalai,N.**, P. Gurumoorthy and P. Rajkumar, 2014. Studies on effect of foaming process parameters on production of stable Tamarind (*Tamarindusindica)* Foam. *International Journal of Agriculture and Food Science Technology*, 5(4): 261-266.
6. Pritam, B. and **N. Manimehalai**, 2014.Kokum fruit bar development via response surface methodology (RSM). *International Journal of Engineering Research and Applications*, 4(2): 223-230.

Honours and Awards

1. Won third prize in KRITAGYA – A National Level Agtech Hackathon conducted by ICAR for innovative concept presentation
2. Best Research Paper (Oral) Presentation Award in National conference on Agricultural Scientific Tamil conducted by Tamil Nadu Fisheries University
3. Received cash prize award for best paper publication in Scopus Indexed journal
4. Qualified NET in the Agricultural and structural Engineering conducted by Agricultural Scientists Recruitment Board, New Delhi.
5. Received TNAU merit Scholarship for pursuing M.E (Agrl. Process Engineering).
6. Received National Merit Scholarship for pursuing B.E (Agrl. Engineering)

2) Dr. Mohd Tanveer, Associate Professor

Individual Biodata

Name : Dr. Mohammad Tanveer

Designation : Associate Professor & Head

Address : Department of Aquacultural Engineering
College of Fisheries Engineering
Tamil Nadu Dr. J. Jayalalithaa Fisheries University, Nagapattinam

Contact

Telephone (O) :04365-256501 * Extn 203

Telephone (R) :

Mobile : +919444344357/+918946068212

Email : mohammadtanveer@tnfu.ac.in

Qualification : PhD (Aquacultural Engineering)

Field of Specialization : Aquacultural Engineering

Major : Aquacultural Engineering

Specializing field : Aeration technique in aquaculture, modelling and optimization in aquaculture water quality, advanced aquaculture systems

Experience (in years) : 08

Current projects : (Please provide max 5)

Sl.No.	Title of the Project	Year	PI & Co- PI of the Project	Funds (in Rs)	Funding Agency
1.	Development and demonstration of innovative fisheries engineering interventions for the production maximization in fisheries industries in Tamil Nadu	2017-2020 (Ongoing)	Dr. Mohammad Tanveer (Co-PI)	21,00,000/-	Tamil Nadu Innovation Initiatives

	Sub project: Demand based solar powered auto feeder for hatcheries				

Completed projects : (Please provide max 10)

Sl.No.	Title of the Project	Year	PI & Co- PI of the Project	Funds (in Rs)	Funding Agency
1.	Development and Performance evaluation of a Desktop based Aquaponics System	2016-2017	Dr. Mohammad Tanveer	100000	TNFU-URP

Research publications (max – 10) :

Journal Paper

1. Roy, S.M., **Tanveer, M.*,** Debaditya, G, Pareek, C. M. and Mal, B. C. (2021). Prediction of standard aeration efficiency of propeller diffused aeration system using response surface methodology and artificial neural network *accepted* in Water Supply Vol 00 No 0, 1 doi: 10.2166/ws.2021.199 **(IF:1.275)**

2. **Tanveer, M.***, Moulick, S. and Mukherjee, C.K. (2020).Mathematical model for goldfish recirculating aquaculture system (GRAS). Aquacultural Engineering 90 (2020):102092. **(IF:3.281)**

3. Roy S.M., **Tanveer, M.***, Mukherjee, C.K. and Mal, B.C. (2020).Design characteristics of perforated tray aerator. Water Supply 20 (5): 1643–1652. (https://doi.org/10.2166/ws.2020.069) **(IF:1.275)**

4. **Tanveer, M.***, Moulick, S. and Mukherjee, C.K. (2020). Economic feasibility of goldfish (Carassius auratus Linn.) recirculating aquaculture system. Aquaculture Research 49(9): 2945-2953. **(IF: 2.082)**

5. **Tanveer, M.***, Sivakumar, M., Balasubramanian, S., Vikneswaran, M. Sabanayagam, S. and Jagan, P. (2018). Analysis of engineering properties of shrimp feed pellets. Green Farming 9 (5): 892-896. **(NAAS 3.85)**

6. **Tanveer, M.,** Sivakumar, M., Balasubramanian, S., Vikneswaran, M. Sabanayagam, S. and Jagan, P. (2018). Analysis of engineering properties of shrimp feed pellets. Green Farming 9 (5): 892-896. **(NAAS 3.85)**

7. **Tanveer, M.**, Roy, S. M., Vikneswaran, M., Renganathan, P. and Balasubramanian, S. (2018). Surface aeration systems for application in aquaculture – a review. International Journal of Fisheries and Aquatic Studies 6(5): 342-347.**(NAAS 3.99)**

8. **Tanveer, M.,** Balasubramanian, S., Sivakumar, M., Manimehalai, N. and Jagan, P. (2018). A technical review on feeders in aquaculture. International Journal of Fisheries and Aquatic Studies 6(4): 305-309. **(NAAS 3.99)**

9. **Tanveer, M.** and Sivakumar, M. (2017). Performance evaluation of Foxtail Amaranth (Amaranthusgangeticus) and GIFT tilapia grown in a recirculating aquaponics system. International Journal of Agricultural Engineering 10 (2): 631-633.**(NASS 4.43)**

10. **Tanveer, M.** (2017).Estimation of flow rate and sizing of trickling filter in a recirculatingaquaculture system. International Journal of Agricultural Engineering 10(2): 577-580.**(NASS 4.43)**

Book/Book Chapter

1. **Tanveer, M.,** MH Chandrakant, M.H. and BC Mal, B.C. (2021) Manual for Aquacultural Engineering Narendra Publishing house, New Delhi ISBN 9789390611928

2. Sana, K., Rajasekar, V. and **Tanveer, M.** (2021). In Advanced Modelling and Innovations in Water Resources Engineering: A conceptual approach towards water management with Aquaponics. Springer Nature, eBook ISBN 978-981-16-4629-4 Hardcover ISBN 978-981-16-4628-7

3. **Tanveer, M.** and Mukherjee, C.K. (2012). Development of Algorithms for *Chl-a* and Sea Surface Temperature, (ISBN 978-3-659-20714-3) LAP LAMBERT Academic Publishing is a trademark of: AVAkademikerverlag GmbH & Co. KG Heinrich-Böcking-Str. 6-8, 66121, Saarbrücken, Germany

Honours and Awards

(Including patents)

- IDEATHON Poster Competition conducted by ICAR-CIFE-Mumbai on 12.11.2020 awarded **Third Prize** for the poster entitled "**Smart Aqua Feeders**"

- Awarded **2nd Prize -**Conceptual approach to estimate the flow rate and sizing of trickling filter in MECH 'O' FEST 2K18, A National Level Technical Symposium at EGS Pillay Engineering College Nagapattinam on 17.02.2018

- Awarded **1st Position** -World Science Day- Guided Amrita Vidyalayam students (Presented a Working model on Aquaponics System) on Science Day Celebration at CoFE on 26.02.2018

- Qualified Gate

3) Mr.T.Anand, Assistant Professor

Individual Biodata

Name : T.Anand

Designation : Assistant Professor and Head

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Nagapattinam

Contact

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Qualification : M.FSc.(PhD)

Field of Specialization : Aquatic Environment Management

Major : Bioflcos systems, Shrimp farming, Water quality management and Disease diagnosis in shrimp farming

Specializing field : Carbon amendments, water quality, nutrient dynamics in Bioflocs and Periphyton systems, Metagenomics of bioflocs systems, Cluster based shrimp farming practices with Bio-security measures

Experience (in years) : Professional experience – 22 years Teaching, Research & Extension – 11 years

Completed projects :

Sl.No.	Title of the Project	Year	PI & Co- PI of the Project	Funds (in Rs)	Funding Agency
1.	E-fish health surveillance and monitoring network to improve fisheries production in Tamilnadu	2017 -2020	Co-Principal investigator	With a financial outlay of 590.40 lakhs	Tamilnadu Innovation Initiatives (TANII)

2.	Development, demonstration and dissemination of solar energy operated aerators in shrimp farms	2019-2020	Co-Principal Investigator	Rs.21.25 lakhs	ICAR Extramural project
3.	Establishment of Fish and Shell Fish Health Certification and Disease Surveillance Laboratories in TamilNadu for Enhancement of Aquaculture Production	2016 – 2018	Co-Principal investigator	Rs. 491.075 lakhs	National Agriculture Development Programme (NADP)
4.	Dissemination of Better Management Practices and Biofloc Technology to enhance SPF*Litopenaeus vannamei* and *Penaeus monodon* shrimp production in Tamilnadu	2011- 2012	Co-Principal Investigator	21.22 lakhs	NADP
5.	Identifying suitable carbon source to augment the formation of bioflocs at farmers' pond level in *Litopenaeus vannamei* intensivculture systems in Sirkali taluk, Nagapattinam district	2 Years 28.03.2013 to3 1.03.2015	Principal investigator	2.1 lakhs	Corpus fund

Research publications :

1. **Theivasigamani Anand***, Arasan Srinivasan, Pandurengan Padmavathy, Paulraj Jawahar and J Stephen Sampathkumar (2020). Metagenomics of biofloc from *Penaeus vannamei* biofloc systems with different salinity and carbon sources. Published a Bio-project submitted to National Centre for Biotechnology Information, U.S. (NCBI), Accession: PRJNA663309 ID: 663309 - https://www.ncbi.nlm.nih.gov/Traces/study/?acc=PRJNA663309
2. Akalesh P., G., Jeyasekaran, R., Jeyashakilaa, **T., Anand**, L., Wilwet, N.,Pathaka, A.H.,Malini, N., Neethiselvan, (2020). Prevalence of antibiotic resistant *Salmonella* spp. strains in shrimp farm source waters of Nagapattinam region in South India. Marine Pollution Bulletin, 155 (2020) 111171
3. Santhana Kumar V, P. K. Pandey, Saurav Kumar, **T. Anand**, Boriah Suryakumar, Rathi Bhuvaneswari (2019). Effect of periphyton (aqua mat installation) in the profitability of semi-intensive shrimp culture systems. Indian Journal of Economics and Development. January 2019, Vol 7 (1), 1-9. (NAAS rating 4.82)

4. A. Rathipriya, **T. Anand**, A. Uma and K. Karal Marx (2019). Prevalence of Diseases caused by White Spot Virus and *Enterocytozoon Hepatopenaei* in *Penaeus vannamei* Shrimp Farms in Nagapattinam District, Tamil Nadu, India. In: Int.J.Curr.Microbiol.App.Sci (2019) 8(6): 2616-2622. (NAAS Rating 5.38)
5. Santhana kumar V.,Pandey P.K., **Anand., T**., Bhuvaneswari, G.R., Dhinakaran, A. and S.Kumar (2018). Biofloc improves water, effluent quality and growth parameters of *Penaeus vannamei* in an intensive culture system. J.Environ Manage., Mar;21;215., pp206-215. (NAAS rating 10.01)
6. S.Monikandon, Kesavan.D. and **T.Anand** (2018). Critical review on acclimatization approach for enhanced survival of shrimp post-larvae in grow-out ponds. In: International Journal of Science, Environment and Technology, Vol. 7, No 4, 2018, 1467 – 1471
7. Santhana Kumar, V., P.K. Pandey, **T. Anand**, Rathi Bhuvaneswari and Saurav Kumar (2017). Effect of periphyton (aqua mat) on water quality, nitrogen budget, microbial ecology, and growth parameters of *Litopenaeus vannamei* in a semi-intensive culture system In: Aquaculture (479), pp 240-249. (NAAS rating 7.83)
8. **Anand, T**., B. Gunalan, P. Padmavathy, V. Rani and C. Anand. 2014. Influence of CN ratios on the heterotrophic activity of model freshwater systems. Int. J. of Res. In Agrl. Sci. 1(1):5-15
9. **Anand, T**., B. Gunalan, P. Padmavathy, V. Rani and C. Anand. 2014. Influence of CN ratios on the heterotrophic activity of model brackish water systems Int. J. of Fisheries & Aq. Studies 1 (3)12-21
10. Velmurugan, P., A. Srinivasan, A. Athithan, P. Padmavathy, D. Manimegalai and **T. Anand**. 2014. Diversity and seasonal variations of plankton in coastal waters receiving salt pan effluents of Thoothukudi, South –east coast of India. Indian J.Fish. 61(4), pp 60-67.
11. Poonkodi, A., P. Padmavathy, A. Srinivasan, R. Jeya Shakila and **T. Anand**. 2016. Water quality characteristics of *Litopenaeus vannamei* shrimp culture systems in Thoothukudi District. J.Exp.zool.India, 19(1)195-200

Honours and Awards (Including patents):

Sl. No.	Name of the Medal/ Award	Issuing Organization/ Body	Date of Receipt	Purpose
1.	Best Paper Award	Agricultural Scientific Tamil Society, New Delhi	Dec'20 & 21 2020	For presenting research paper in the 6th National Conference on Agricultural Scientific Tamil
2.	Appreciation Award	TNJFU, Nagapattinam	24th June 2019	For coordinating the Farmers' meet and farm tour at WAS- APA 2019 held at Chennai during 19th to 21st of June 2019
3.	Best paper in Fishery Science section	TNAU, Coimbatore	23.08.214	In First National Agriculture Scientific Tamil Conference – Presented a paper entitled "Vanami eral valarpil biofloc technology – a revolution in production"

4) Er.D.Babiyola, Assistant Professor

Individual Biodata

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Designation : Assistant Professor

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MSP lakshmi nagar
Karaikal – 609 609

Contact

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Telephone (R) :

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Email : babiyola@tnfu.ac.in

Qualification : B.E (Electronics & Instrumentation) Engineering
M.E (Instrumentation & Control Engineering)

Field of Specialization :

Major : Instrumentation and Control Engineering

Specializing field : Sensors and Transducers

Experience (in years) : 7.5 years

Current projects : NIL

Completed projects:

1. Operated as Principal Investigator for the project entitled "Development, demonstration and dissemination of solar energy operated aerators in shrimp farms" funded by Indian Council of Agricultural Research, New Delhi for 21.25 Lakhs.

2. Operated as Principal Investigator for the project entitled "Development of fish freshness gadget using Fuzzy logic based technology in Indian mackerel (Rastrelliger kanagurta) landed in Nagapattinam coast" funded by TNJFU for 1 Lakhs.

Research publications :

1. Mercy Amrita, C. and D. Babiyola. 2017. Self Healing Thermal Aware RPL for Body Area Networks. *International journal of Science, Environment and Technology*, 5 (5):2818 -2822 **NAAS rating:3.98**
2. Mercy Amrita, C. A. Pravin Renold and D. Babiyola, 2016. Thermal Aware Routing protocol for Body Area Networks: A Survey. *International Journal Of Computer Science Engineering And Information Technology Research*, 6(4) : 51-60 **NAAS rating:3.63.**

3. Mercy Amrita, C. and Babiyola. D, 2018. Analysing the water quality parameters from traditional to modern methods in aquaculture. International Journal of Science, Environment and Technology, 7(6): 1954 – 1961

Honours and Awards

Best paper award for the paper, 2016. Thermal Aware Routing protocol for body Area Networks: A Survey, International Journal of Computer science and Information Technology Research.

5) Dr.D.Kesavan, Assistant Professor

Individual Biodata

Name : Dr.D.Kesavan

Designation : Assistant Professor & Head

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Contact

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Qualification : M.Sc., Ph.D.

Field of Specialization :

Major : Chemistry

Specializing field : Polymer Science and Nanotechnology

Experience (in years) : 8 years 5 months

Completed projects : **3 nos.**

Sl.No.	Title of the Project	Year	PI & Co- PI of the Project	Funds (in Rs)	Funding Agency
1.	Development of halochromic sensor - based on bionanocomposite for monitoring spoilage of packaged fish	2019-2020	Dr.D.Kesavan	2,00,000/-	TNJFU-JTRF
2.	Development and demonstration of innovative fisheries engineering interventions for the production maximization in fisheries industries in Tamil Nadu Sub project 3.Development of small scale automatic integrated powder making unit using fish/food waste	2017-2021	Dr.M.Sivakumar Dr.N.Manimehalai Dr.P.Karthickumar Dr.D.Kesavan	30,60,000/-	TANII

3.	Preparation of porous carbon derived from lowcost biomass for desalination	2016-2017	Dr.D.Kesavan	1,00,000/-	TNJFU- URP

Recent Best 10 Research publications :

1. **Kesavan, D.,*** Vinothini Vaz, M., Madhan, K., Hema, A.,

Real-Time Detection of Packaged Seer Fish Spoilage using Halochromic Optical Nose Journal of Aquatic Food Product Technology, 2021, 30, 484-495.

IF: 1.767. NAAS Rating: 7.767.

2. Kandasamy, S., **Kesavan, D.,** Bhuvanendran, N., Zhang, B., He, Z., Narayanan, M., Mathimani, T., Ravichandran, S., Pugazhendhi, A.

Accelerating the production of bio-oil from hydrothermal liquefaction of microalgae via recycled biochar-supported catalysts.

Journal of Environmental Chemical Engineering. 2021, 9, 105321.

IF: 5.909. NAAS Rating: 11.909.

3. **Kesavan, D.,** Kopperundevi, S.N., Padmavathi, P.

Halochromic Optical Nose for Assessment of Spoilage of Packed Seer Fish (II)

Pigment and Resin Technology, 2021, Published online, DOI: 10.1108/PRT-11-2020-0115.

IF: 1.263. NAAS Rating: 7.263.

4. **Kesavan, D.,** Souta, N., Shuichi, S., Ichiro, Y., and Kousaku, O.

Electrospinning and Post-Spun Chain Conformations of Synthetic, Hydrophobic Poly(α- amino acid)s Polymers, 2020, 12(2), 327. **IF: 4.329. NAAS Rating: 10.329.**

5. **Kesavan, D.,** Kopperundevi, S.N., Padmavathi, P.

Halochromic Optical Nose for Assessment of Spoilage of Packed Seer Fish Pigment and Resin Technology, 2020, DOI: 10.1108/PRT-08-2020-0085.

IF: 1.263. NAAS Rating: 7.263.

6. **Kesavan, D.,** J. Park, H.Y. Kim, B.S. Kim.

Facile green synthesis of silver nanodendrite/cellulose acetate thin film electrodes for flexible supercapacitors

Carbohydrate Polymers 163, 2017, 153-161. **IF: 9.381. NAAS Rating: 15.381.**

7. Rajeswari, V., **Kesavan, D.,** Viswanathamurthi, P.

Expired pharmaceutical compounds as potential inhibitors for cast iron corrosion in acidic medium

Research on Chemical Intermediates, 43(7), 2017, 3893-3913.

IF: 2.914. NAAS Rating: 8.914.

8. Tae-Hoon, K.,[#] **Kesavan, D.,**[#] Hak Yong, K., Byoung-Suhk, K.

Facile synthesis of core/Shell-like NiCo2O4-decorated MWCNTs and its excellent electrocatalytic activity for methanol oxidation

Nature - Scientific Reports, 2016, 6, 20313. # Equal Contribution

IF: 4.379. NAAS Rating: 10.379.

9. Kavitha, R., Byoung-Suhk, K., Kalyanaraman, R., Arumugam, S., **Kesavan, D.*** Surface protection of steel in acid medium by Tabernaemontana divaricata extract: Physicochemical evidence for adsorption of inhibitor

Journal of Molecular Liquids, 2016, 214:111-116.

IF: 6.165. NAAS Rating: 12.165.

10. **Kesavan, D.,** Danyun, L., Hak-yong, K., Byoung-Suhk, K.

Flexible transparent electrode based on PANi Nanowire/Nylon Nanofiber Reinforced Cellulose Acetate Thin Film as Supercapacitor

Chemical Engineering Journal, 2015, 273, 603-609. **IF: 14.273. NAAS Rating: 20.00 Honours and Awards**

Patents

1. Byoung-Suhk, K., and **Kesavan, D.**

Nanofibers having nanosize protrusions and fabrication method for the same South Korean Patent, Patent No. 10-1625358-0000, 2016.

2. Byoung-Suhk, K., and **Kesavan, D.**

Dying methode of cellulose nanofiber by vegetable dye South Korean Patent, Patent No. 10-1751819-0000, 2017.

3. Byoung-Suhk, K., and **Kesavan, D.**

Fabrication Method for flexible and fibrous transparent electrode composing polyaniline nanowire and flexible and fibrous transparent electrode compositing polyaniline nanowire using the same South Korean Patent, Patent No. 10-1622625-0000, 2016.

Awards and Honours

1. **Best Paper Award (Oral), 2020**, Virtual International Conference on Food and Agriculture Science and Technology, Salem, India, 31.10.2020.
2. **Best Paper Award (Oral), 2020**, 5th National Conference on Agricultural Scientific Tamil, 9-10.10.2020, TNAU, Coimbatore, India.
3. **Junior Teacher Research Fellowship, 2019**, Tamil Nadu Dr.J.Jayalalithaa Fisheries University, Nagapattinam, India.
4. **Best Paper Award (Oral), 2018**, 4th National Conference on Agricultural Scientific Tamil, 19-20.11.2018, IFPGS, Chennai, India.
5. **Best Paper Award (Poster), 2018**, International Conference on Recent Advances in Food Processing Technology, Thanjavur, India.
6. **Outstanding Reviewer Award, 2018**, Carbohydrate Polymers, Elsevier, Netherlands.
7. **Best Teaching Faculty Award, 2017**, Tamil Nadu Fisheries University, Nagapattinam, India.
8. **Outstanding Reviewer Award, 2017**, Carbohydrate Polymers, Elsevier, Netherlands.
9. **Young Scientist Award**, Chemical Science Review and Letters, 2016, India.
10. **Young Scientist Fellowship Award**, Tamil Nadu State Council for Science and Technology, 2014, India.
11. **Top 1000 Biographical Profile in Academics** in the new Marquis Who's Who World® 2015 (32nd Edition), 2014, USA.
12. **Outstanding Student Presentation Award (Oral Presentation)** - International Textile Bioengineering and Informatics Symposium-2012, conducted by Textile Bioengineering and Informatics Society, Japan.
13. **Excellent Poster Presentation Award**, 6th International Conference on Advanced Fiber/Textile Materials-2011, Japan.
14. **Invited Student Participant** - First Science Conclave - A Congregation of Nobel Laureates (interaction between Nobel Laureates/scientists/students) 2008, IIIT-A, India, Sponsored by MHRD, Govt. of India.
15. **Best Outgoing Student** - Certificate of Merit - 2007, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, India.
16. **1st Place - Mime Show** - Bharti Cultural Fest 2007 - Bharathiyar University, Coimbatore, India.
17. **Best NSS Volunteer** - 2006, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, India.

Radio/TV Talks

1. “Pocket-size devices for aquaculture”, All India Radio, Karaikal, 09.02.2021.
2. “Sensor of Real-time Monitoring Spoilage of packed Fish and Pocket Size Device for Aquaculture, DD Podhigai, in Pon Vilaiyum Boomi, telecasted on 23.12.2020.
3. “Overview of research activities of Department of Basic Sciences”, CoFE, DD Podhigai, in Pon Vilaiyum Boomi, telecasted on 10.12.2020.
4. "Microplastics", All India Radio, Karaikal, 24.01.2020.
5. “Water Quality Management in Fish Culture”, All India Radio, Trichy, 23.06.2017.
6. “Water Quality Management in Fish Ponds During Rainy Seasons”, All India Radio, Karaikal, 27.10.2017.

Guest Lectures/Invited Talks/Chief Guest/Chair

1. Guest Talk on “Intellectual Property Rights & Entrepreneurship” in PKR Arts College for Women, Gobichettipalayam on 27.03.2021.
2. Guest Talk on “Functional Polymeric Materials and Their Applications”. One Day National Colloquium on Biodivision, 28.02.2021, Sir Isaac Newton College of Arts and Science, Nagapattinam
3. Chair, 6th National Agricultural Scientific Tamil Conference, 22.12.2021.
4. Guest Talk on "Energy Storage Devices", AICTE Teaching & Learning (ATAL) Sponsored Five Days Online FDP on Energy Storage Devices and E-Mobility, Syed Ammal Engineering College, 28.08.2020.
5. Chief Guest, AICTE Teaching & Learning (ATAL) Sponsored Five Days Online FDP on Energy Storage Devices and E-Mobility, Syed Ammal Engineering College, 28.08.2020.
6. Guest Talk on "Chemistry of Natural Products: Carbohydrates, Proteins, and Peptides, Fatty Acids, Nucleic Acids", Kalasalingam Academy of Research and Education (Deemed to be University), 27.07.2020.
7. Guest Talk on "Applications of Energy Dispersive X-ray Spectroscopy in Surface Chemistry and Nanotechnology", Vels University, Chennai, 23.07.2020.
8. Guest Talk on "Design and Development of Functional Materials for Health Monitor and Energy Storage Devices", Dhanalakshmi Srinivasan College of Arts and Science for Women, Perambalur, 22.07.2020.
9. Seminar talk on "Microplastics: Challenges and Opportunities", College of Fisheries Engineering, Nagapattinam, 18.07.2020.
10. Seminar talk on "Marine Corrosion", College of Fisheries Engineering, Nagapattinam, 11.07.2020.
11. Guest Talk on "Portable Devices for Aquaculture", Tamil Nadu Dr.J.Jayalalithaa Fisheries University, Nagapattinam, 12.06.2020.
12. Guest Talk on "Essentials of Effective Scientific Writing", Vinayaka Missions Research Foundation (Deemed to be University), Salem, 11.06.2020.
13. Guest Talk on "Intellectual Property Rights and Its Commercial Aspects", KPR Engineering College, Coimbatore, 23.05.2020
14. Delivered a Guest Lecture on "Art of Scientific Writing", in Online Workshop on Scientific Writing, Salem, 08.05.2020.
15. Delivered a Guest Lecture on "Intellectual Property: Patentability, Process, and Commercial Aspects", in Three Days Workshop on Intellectual Property Rights, at Bon Secours College, Thanjavur on 26.02.2020.
16. Chairperson for Poster Session, National Conference on Recent Trends in Chemistry- 2020, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, 07.02.2020.
17. Chairperson for Poster Session, International Conference on Chemical and Environmental Research, Jamal Mohamed College, Trichy, 08.01.2020.
18. Invited Talk on "Applications of Nanotechnology in Food Industry” in 21 days ICAR sponsored CAFT training programme at PJTSAU, Hyderabad on 24.08.2018
19. Guest Talk on “Art of Scientific Writing”, One Day Workshop on Scientific Writing at College of Fisheries Engineering, Nagapattinam, on 08.03.2018
20. Delivered a Guest Lecture at Department of Food Processing Technology and Management, PSGR Krishnammal College for Women, Coimbatore on 'Nanotechnology in Food Industry: Applications, Challenges, and Opportunities' on 10.08.2018.
21. Invited Talk - "Design and Development of Biobased Functional Nanomaterials by Novel Methods", National Conference on "Emerging Trends in Material, Medicinal and Environmental chemistry", at Karpagam Academy of Higher Education, Coimbatore on 09.03.2018.

22. Delivered guest lecture on “Fresh Water Fish Culture Water Quality”, in Seminar on fresh water fish culture water quality analysis, free water quality analysis camp on 19.07.2016 at Centre for Inland Fish Brood Stock Development, Thanjavur.
23. Delivered Guest Lecture on “Water Quality Management of Ornamental Fish Farm and Tanks” in Basic Techniques in Ornamental Fish Culture and Breeding on 17.12.2016 at ADM College for Women, Nagapattinam.
24. Delivered lecture on “R&D Funding Agencies in India and Opportunities”, In-House Seminar, College of Fisheries Engineering, Tamil Nadu Fisheries University, Nagapattinam, on 01.02.2017.
25. Delivered talk on “Opportunities in Fisheries Science and Engineering”, in Higher Education and Career Guidance Programme, Organized by Department of School Education, Nagapattinam, on 06.04.2017 at EGS Pillai Engineering College, Nagapattinam.
26. Delivered talk on “Opportunities in Fisheries Science and Engineering”, in Higher Education and Career Guidance Programme, Organized by Department of School Education, Nagapattinam, on 07.04.2017 at, Varsha Mahall, Thirumarugal, Nagapattinam.
27. Delivered talk on “Opportunities in Fisheries Science and Engineering”, in Higher Education and Career Guidance Programme, Organized by Department of School Education, Nagapattinam, on 07.04.2017 at Prime College of Architecture, Sikkal, Nagapattinam.
28. Delivered talk on “Opportunities in Fisheries Science and Engineering”, in Higher Education and Career Guidance Programme, Organized by Nagore Lions Club, Nagapattinam, on 11.04.2017 at Pensioners Association Building, Nagapattinam.
29. Deliver talk on “Corrosion Inhibitors” in In-House Seminar on 21.06.2017 at College of Fisheries Engineering, Nagapattinam.
30. Delivered talk on “Water Quality Testing and Management”, ATMA Training Programme, TNFU, Nagapattinam on 02.08.2017.
31. Delivered a talk on "Water Quality Management in Freshwater Farms", CeSA, TNFU, Thanjavur, 2016.

Member of

International Association of Engineers. Membership no.185798 (Since 2017) International Society for Environmental Information Sciences, Canada (Since 2017) The Association of Technical Analysts, India (Since 2017)

Editor

Editorial Board Member, Meenvalasudar, A bimonthly Magazine from TNJFU Editorial Board Member, TNJFU Newsletter

Editorial Board Member, Chemical Science Review and Letters

Reviewer of

SERB research proposal

Industrial and Engineering Chemistry Research (ACS) International Journal of Biological Macromolecules (ELSEVIER) Cellulose (SPRINGER)

Carbohydrate Polymers (ELSEVIER) Materials Chemistry and Physics (ELSEVIER) Material Letters (ELSEVIER)

Ionics Journal (SPRINGER)
Desalination and Water Treatment (TAYLOR & FRANCIS) International Journal of Industrial Chemistry (ELSEVIER) Journal of Molecular Liquids (ELSEVIER)

Spectrachimica Acta A (ELSEVIER) Chemical Science Review and Letters European Journal of Chemistry

Clean Energy (Oxford Journals) And many more

6) Er. S. Monikandon, Assistant Professor

Individual Biodata

Name	:	Er.S. Monikandon
Designation	:	Assistant Professor
Address	:	Department of Basic Engineering College of Fisheries Engineering Tamil Nadu Dr.J. Jayalalithaa Fisheries University, Nagapattinam – 611 002
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Qualification	:	M.E.,
Field of Specialization	:	
Major	:	Civil Engineering
Specializing field	:	Water Resources Engineering
Experience (in years)	:	10 years 6 months
Completed projects	:	**2 Nos.**

Sl.No.	Title of the Project	Year	PI & Co- PI of the Project	Funds (in Rs)	Funding Agency
1.	Development and demonstration of innovative fisheries engineering interventions for the production maximization in	2017-2020			TANII

	fisheries industries in Tamil Nadu Sub project 4.Demand based solar powered auto feeder for hatcheries		**PI** Dr. S. Balasubramanian **Co- PI** Dr. M. Sivakumar Dr.Mohammad Tanveer Er. S. Monikandon	21,00,000/-	
2.	Design of an integrated Acclimation tank unit for shrimp culture system.	2018-2019	**PI** Er. S. Monikandon	0.75 Lakhs	URP

Recent Best 10 Research publications :

1. Subramani, V., Murugan, P., Mathiyazhagan, N., Ponniah, A., Ramalingam, S., Devarajan, N., Balaji, P., Kesavan, D., Monikandon, S. In-situ and ex-situ Phycoremediation Competence of Innate Scenedesmus sp. on Polluted Thirumanimuthar River Water Chemical Science Review and Letters, 2020, 9:839-852. NAAS rating: 4.75.
2. Gnanavel, S., Devarajan, N., Gajendiran, K., Sabariswaran, K., Selvaraj, V., Ganapathi U., Kesavan, D., Monikandon, S.Development of Ecofriendly Bio-Plastics from the Leaf Extract of Manihot Esculenta. Chemical Science Review and Letters,2020, 9:978-985. NAAS rating: 4.75.
3. Kavitha., R., S. Monikandon, D. Kesavan, M. Gopiraman and S. Arumugam 2016. Physiochemical evidence for the adsorption of Jacaranda mimosifoila on steel against corrosion in acid medium oriental journal of chemistry 32:2147-2153
4. Monikandon, S. and D.Kesavan 2016, Evaluation of water quality of cauvery river in Tiruchirappalli District, Tamil Nadu by principal component analysis, Current world environment. 11:89-95 (NAAS rating 4.98)
5. 5Krishnaprakash., A. S. Monikandon, Mohammad Tanveer and D.Kesavan 2016. Physiochemical analysis of ground water samples of south coastal areas of Kanniyakumari in the post tsunami scenario. Material science Research India,13:116-121. (NAAS rating 4.28)
6. Krishnaprakash, A. and S. Monikandon 2017. Crack failure analysis of scaffolding frame intersection using ADINA, Material science Research India, 14:47-51. (NAAS rating 4.28).
7. Monikandon, S. and D.Kesavan 2017, Assessment of water quality of Cauvery river in Erode district, Tamil Nadu by variance variable technique. International journal of science, Environment and technology 5: 2017-2022 (NAAS rating 3.98)
8. Monikandon., S. Mohammad Tanveer and D. Kesavan 2016. A conceptual approach of infiltration gallery in aquaculture system to reuse the infiltration. Journal of science, Environment and Technology 5:3702-3708 (NAAS rating 3.98)

9. Mohammad Tanveer., S. Monikandon and D. Kesavan 2016, Application of green technology in aquaculture wastewater, A conceptual approach, International journal of science, Environment and Technology 5:2046-2055 (NAAS rating 3.98)
10. Monikandon, S. and D. Kesavan 2016. Surface protection of steel by Adsorption of milksia Pinnota Extract, Material Science Research India 13:101-105. (NAAS rating 4.28)

Honours and Awards

1. Best oral presentation Award Virtual International Conference on Food and Agriculture Science and Technology, October 2020.
2. Co-chair for a technical session in 6th Indian young co-technical Engineer's conference, NIT, Trichy on 10.03.2017 to 11.03.2017.
3. Young scientist Award, AUFAU International Award, India 2016.
4. Best oral presentation Award 2nd National conference on Fundamental and Applied Chemistry, June 2016.

7) Dr. M. Ramar, Assistant Professor

Individual Biodata

Name : Dr. M. RAMAR

Designation : Assistant Professor

Address : Department of Basic Sciences
College of Fisheries Engineering
TNJFU Campus
Vettar River View Campus
Nagapattinam – 611 002

Contact

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Email : ramar@tnfu.ac.in

ramar86phy@gmail.com

Qualification : M.Sc., M.Phil., B.Ed., Ph.D.,

Field of Specialization :

Major : Physics

Specializing field : Organic Electronics
Piezoelectric energy harvesting devices
Crystal Growth

Experience (in years) : 9 years

Current projects : Nil

Completed projects : TNJFU - URP

Sl.No.	Title of the Project	Year	PI & Co- PI of the Project	Funds (in Rs)	Funding Agency
1	Development of bio-piezoelectric material from prawn shell	2017-2018	Dr. M. Ramar	1.0	TNJFU

Research publications (max – 10) :

1. **Ramar Marimuthu**, Sabarmathi Ravichandran, Aarthi Suresh, 2020. Piezoelectric Property from Processed Prawn Shells, *Chemical Science Review and Letters*, 9 (36):933-940. (NAAS Rating - 5.21)
2. R. Palani, B. Kannan, **M. Ramar** and S. Balasubramanian, 2019. Development of Linear Encoding Problem to Minimize Fish Feeds, *Research Journal of Chemical and Environmental Sciences*, 7 (2):22-26. (NAAS Rating - 4.64)
3. **M. Ramar**, S. Balasubramanian, 2018. Development of piezoelectric property material for nanogenerator production. *Research Journal of Chemical and Environmental Sciences*, 6 (1):114-123. (NAAS Rating - 4.64)
4. **M. Ramar**, S. S. Rawat, R. Srivastava S. K. Dhawan, C. K. Suman, 2016. Impact of cross linking chain of N,N'-bis(napthalen-l-yl)-N,N'- bis(phenyl)-benzidine on temperature dependent transport properties, *Advanced Materials Letters*, 7(10):783-789. (IF - 1.15)
5. **M. Ramar**, V. Yadav, R. Srivastava, C. K. Suman, 2015. Effect of Titanyl Phthalocynine doping on opto-electrical properties of Alq_3 thin films, *Journal of Material Science and Materials Electronics*, DOI: 10.1007/s10854-015-3341-4. (IF - 2.22).
6. **M. Ramar**, S. Kajal, Prabir Pal, R. Srivastava, C. K. Suman, 2015. Study of binary and ternary organic hybrid CdSe quantum dot photodetector, *Applied Physics A*, 120:1141–1148. (IF - 1.810)
7. **M. Ramar**, Priyanka Tyagi, C.K. Suman and Ritu Srivastava, 2014. Enhanced carrier transport in Tris(8-hydroxyquinolinate) aluminum by Titanyl Phthalocyanine doping, *RSC Advances*, 4, 51256. (NAAS Rating - 9.05) (IF - 3.119)
8. **M. Ramar**, C. K. Suman, R. Manimozhi, R. Ahamad and R. Srivastava, 2014. Study of Schottky barrier contact in binary and ternary hybrid CdSe Quantum dot solar cells, *RSC Advances*, 4, 32651-32657. (NAAS Rating - 9.05) (IF - 3.119)
9. **M. Ramar**, S. S. Rawat, R. Srivasatava and C. K. Suman, 2017. AC Impedance Spectroscopy Studies of PtPc doped Alq_3 Thin Films, *Springer Proceedings in Physics*, 189:383-390. Doi: 10.1007/978-3-319-44890-9_35. (IF - 0.30)
10. **M. Ramar**, C. K. Suman , Priyanka Tyagi and R. Srivastava, 2015. Optical And Electrical Properties of TiOPc Doped Alq_3 Thin Films, *AIP Conference Proceedings*, 1665:120001-1–120001-3, doi: 10.1063/1.4918108. (IF - 0.415)

Honours and Awards
(Including patents)

1. Qualified CSIR – UGC JRF in Physical Sciences conducted by CSIR.
2. Qualified CSIR - Senior Research Fellowship - January 2014 to August 2015.
3. Qualified CSIR - Junior Research Fellowship - January 2012 to December 2013.
4. Bharathidasan University Fourth Rank in M. Sc Physics
5. **Best Oral Paper Presentation Award**, Category of Energy, entitled on *Recycled crab shell waste as piezoelectric nano-generator*, "Virtual International Conference on Materials for Food, Energy, Environment, and Health", Aufau Science Forum, Salem, India, 27.06.2021 and 28.06.2021.
6. **Best poster presentation** award entitled on "Effect of mixed solvent concentration on dual donor Organic Solar cells" at CSIR-National Physical laboratory, New Delhi held on National Science day 2013.
7. **Best Project presentation** on "LED based Reading lamp" at S. S. Duraisamy Memorial College, Kovilpatti, Thoothukudi District, 2006.

8) Er.C.Mercy Amrita, Assistant Professor

Individual Biodata

Name : Er.C.Mercy Amrita

Designation : Assistant Professor

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Kavalan nagar
Near All India Radio Karaikal-609605

Contact

Telephone (O) : -

Telephone (R) : -

Mobile :9566643241

Email : mercyamrita@tnfu.ac.in

Qualification : B.E (Computer Science &Engineering)
M.E (Mobile and pervasive Computing)

Field of Specialization :

Major : Mobile and pervasive Computing

Specializing field : Wireless Sensor Networks Mobile application development

Experience (in years) : 3 years

Current projects (submitted) 1

Sl.No.	Title of the Project	Year	PI & Co- PI of the Project	Funds (in Rs)	Funding Agency
1.	Development of e- interface indicator gadget for domestic level freshwater aquarium	2017-2018	Er. C. Mercy Amrita	75,000	TNFU URP

Completed projects : NIL

Research publications :

1. Mercy Amrita, C., A. Pravin Renold and D.Babiyola, 2016. Thermal Aware Routing protocol for Body Area Networks: A Survey. International Journal Of Computer Science Engineering And Information Technology Research, 6(4) : 51-60

2. Mercy Amrita, C. and P. Karthickumar. 2016. Need for mobile application in fishing. International journal of Science, Environment and Technology, 5 (5):2818-2822
3. Karthickumar, P. and C. Mercy Amrita. 2016.Application of Machine Vision Technique in Fish Processing an overview, Advances in Life sciences 5 (23)10866- 10870.
4. Mercy Amrita, C and D. Babiyola. 2017. Self Healing Thermal Aware RPL for Body Area Networks International journal of Science, Environment and Technology, 5 (5):2818 -2822
5. Mercy Amrita, C. and R.S Lysa Packiam . 2016. Various Pervasive Techniques in Fish Culture. International Journal of Current Science Research, 2(2):333-345 ISSN: 2454-5422
6. Mercy Amrita, C. and P. Karthickumar. 2016. Applications of machine vision technique in aquaculture – an overview. In Aquaculture development trends in India. Edited by Chelladurai. 116-140p. ISBN : 9789352675265

Honours and Awards

1. Sankalp Topper Award 2013-14 for Masters "Mobile and Pervasive computing"
2. **Best paper award** for the paper, 2016. Thermal Aware Routing protocol for body Area Networks : A Survey, International Journal of Computer science and Information Technology Research.

9) Dr. M.Sivakumar, Assistant Professor

Individual Bio data

Name :Dr. M. Sivakumar

Designation :Assistant Professor and Head

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College of Fisheries Engineering
TNJFU, Nagapattinam.

Contact

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Telephone (R) :

Mobile :+91- 9865843427

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Qualification :B.E Mechanical Engineering
M.E Production Engineering
Ph.D Cryogenics/HVAC

Field of Specialization :

Major : Mechanical Engineering

Specializing field :Heating Ventilating and Air Conditioning [HVAC], Cryogeniscs

Experience (in years) : 20

Current projects :

Sl. No.	Title of the Project	Year	PI & Co- PI of the Project	Funds (in Rs)	Funding Agency
1	Development and demonstration of innovative fisheries engineering interventions for the production maximization in fisheries industries in Tamil Nadu	2017 - 2020	Dr. M. Sivakumar Dr. N. Manimehalai Dr. P. Karthickumar Dr. D. Kesavan Dr.MohammadTanveer Er. S. Monikandon	75,20,000/-	Tamil Nadu Innovation Initiative

Completed projects :

Sl. No.	Title of the Project	Year	PI & Co- PI of the Project	Funds (in Rs)	Funding Agency
1	Design and Development of Nano particle Eco friendly chilling plant for fish processing	2016-17	Dr. M. Sivakumar	1,00,000	TNJFU

10 Indigenous Fish Processing, Feeding Machines of fisheries products developed in the fisheries sector and one more machine is under development

Department Name	:	Department of Basic Engineering
Scheme Title	:	Development and demonstration of innovative fisheries engineering inventions for the product maximization in fisheries industries
Findings	:	**10 Indigenous Fish Processing machines were designed and Developed**

Fish Filleting Machine

Fish Slicing Machine

Fish Descaling Machine

Fish Decapitation Machine

Demand based Auto Feeder

Exhibited in Honourable Chief Ministers Programme on 07.03.2020 at the Village "Orathur", Nagapattinam to the public for popularisation and start-up of the new company

Solar powered Auto Feeder

Mixer and Accessories for value addition of the fish powder

Fish Meat Extractor or Mincer

 Control system with Mobile APP	 Fish meal Powder Making Machine	

5 TECHNOLOGIES DEVELOPED

1	Technology Developed	:	Fish De-Scaling Machine	
2	Background / Necessity	:	Manual scaling of larger fishes requires around 50% of the total time necessary to produce headed and gutted fish without fins (FAO, 1996)	
3	Scientific Interventions	:	This machines adopts itself for de-scaling all type of fins of all fish species ranging from 2 inches to 8 inches in size This machine adopts itself automatically for various types of fish profiles (Morphology) This semi automated machine indigenously developed in such a way that it does not damage the operators in any aspect while operation Production capacity ranges from 0.2 to 0.5 tonns per hour based on the size of the fishes This machine occupies very little space and hence even it can be installed in fishing boats Morphology of the fish scales were tackled mechanically (Profile & speed)	
4	Commercial Potential	:	All Fishing vessels, Landing centers and Fish retail shop can have each one machine	
5	Economic Benefits/ Utilities	:	Self life increases due to hygienic process	
6	Photo	:		
				
Fabricated Machine			F-Descaling - Demo @ CoFE	F-Descaling - Demo @ Melavanchore - 28.09.2020

1	Technology Developed	:	Fish filleting machine	
2	Background / Necessity	:	Manual filleting of larger fishes requires around 50% of the total time necessary to produce headed and gutted fish without fins (FAO, 1996)	
3	Scientific Interventions	:	This machines adopts itself for filleting all type of fish species ranging from 2 inches to 8 inches in thickness without any limitation in length This machine provides room for central thickness ranging from 5mm to 20mm according to the various types of fish profiles (Morphology) This semi automated machine indigenously developed in such a way that it does not damage the operators in any aspect while operation Production capacity ranges from 0.5 to 1.5 tonns per hour based on the size of the fishes This machine occupies very little space and hence even it can be installed in fishing boats Morphology of the fish was tackled using profile plate and adjuster.	
4	Commercial Potential	:	All Fishing vessels, Landing centers and Fish retail shop can have each one machine	
5	Economic Benefits/ Utilities	:	Self life increases due to hygienic process	
6	Photo	:		
				
Fabricated Machine			F- Filleting - Demo @ CoFE	F- Filleting - Demo @ Melavanchore - 28.09.2020

1	Technology Developed	:	Fish Slicing machine	
2	Background / Necessity	:	Hygienic Slicing of fish	
3	Scientific Interventions	:	This machine provides room for adjusting the fish slice thickness ranging from 15mm to 45 mm and it operates for any fish profile and species without any other consideration. This machines adopts itself for all type of fish species ranging from 1 inches to 5 inches in thickness and 8 inches of length This machine adopts itself automatically for various types of fish profiles (Morphology) This semi automated machine indigenously developed in such a way that it does clean itself during operation due to its operating velocity Production capacity ranges from 0.5 to 0.1 tonns per hour based on the size of the fishes This machine occupies very little space and hence even it can be installed in fishing boats Morphology of the fish was tackled mechanically by height adjuster & Profile carrier.	
4	Commercial Potential	:	All Fishing vessels, Landing centers and Fish retail shop can have each one machine	
5	Economic Benefits/ Utilities	:	Self life increases due to hygienic process	
6	Photo	:		
				
Fabricated Machine			F-Slicing - Demo @ CoFE	F-Slicing - Demo @ Melavanchore - 28.09.2020

1	Technology Developed	:	Fish De-capitation Machine	
2	Background / Necessity	:	Manual processing of larger fishes requires around 50% of the total time necessary to produce headed and gutted fish without fins (FAO, 1996)	
3	Scientific Interventions	:	This machines adopts itself for all fish species ranging from 2 inches to 8 inches in size This machine adopts itself automatically for various types of fish profiles (Morphology) This semi automated machine indigenously developed in such a way that it does not damage the operators in any aspect while operation Production capacity ranges from 0.5 to 1.5 tonns per hour irrespective of the size of the fishes This machine occupies very little space and hence even it can be installed in fishing boats Semi automated hand held operations successfully processes the fish	
4	Commercial Potential	:	All Fishing vessels, Landing centers and Fish retail shop can have each one machine	
5	Economic Benefits/ Utilities	:	Self life increases due to hygienic process	
6	Photo	:		
				
Fabricated Machine			F- De-capitation - Demo @ CoFE	F- De-capitation - Demo @ Melavanchore - 28.09.2020

1	Technology Developed	:	Demand Based Auto Feeder
2	Background / Necessity	:	Manual feeding Require more time and it produce more wastage. It taps the characteristics of fishes for efficient feeding
3	Scientific Interventions	:	It operate based on the fighting characteristics and stimulus of the fish species in pond

			The feeding capacity is 25 to 30 grams per stroke (single stimulus) This machine adopts and provides the survival techniques and keeps the fishes fit and healthy through their feeding demands Requirement of Adopting all types and sizes of fish feed ranging from 1mm to 8mm of floating as well as sinking feed This feeder operates using the gravitational force and time of stimulation of the fishes at pond This feeder permits the users to maintain the health and characteristics of wilderness of fishers based on the hierarchy It taps the characteristics of fishes for efficient feeding	
4	Commercial Potential	:	All Fish farmers must have minimum 2 machines per pound (Fresh and Brackish)	
5	Economic Benefits/ Utilities	:	60% of wastage can be saved	
6	Photo	:		
				
Fabricated Machine			F - Demand Based Auto Feeder - Demo @ Nagore	F- Demand Based Auto Feeder - Demo @ Chief Miisters Visit o Orathur - 11.03.2020

Research publications :

1. M. Sivakumar*, P. Somasundaram (2014). Exergyand Energy analysis of Three Stage Auto Refrigerating Cascade System using Zeotropic Mixture for Sustainable Development. *Energy conservation and Management*, 84 (C): 859-596.

2. M. Sivakumar*, P. Somasundaram (2014). Thermodynamic Investigations of Zeotropicmixture of R290,R23& R14 on Three Stage Auto Refrigerating Cascade System. *Thermal Science*, DOI: 10.2298/TSCI1401030915.
3. M. Sivakumar*, P. Somasundaram (2013). Exergy and Performance analysis of Three Stage Auto Refrigerating Cascade (3 stage ARC) System using Environment Friendly Zeotropic Mixture of R290,R170& R14. *Pollution Research*, 32 (4): 943-952.
4. M. Sivakumar*, P. Somasundaram, P.Thangavel (2013). Exergy and Performance analysis of Three Stage Auto Refrigerating Cascade (3 stage ARC) System using Zeotropic Mixture of Eco-Friendly Refrigerants. *International Review of Mechanical Engineers*, 8 (1): 124-134.
5. K. Karthikeyan*, P. Somasundaram, M. Sivakumar*, C.J. Thomas Renald and 5G. Jayabalaji (2017). Certain Studies On Ecofriendly Refrigerants Used In Vapour Compression Refrigeration System Of Automobile Air-Conditioner. *Advances in Natural and Applied Sciences*, 11 (2): 77-84.
6. M. Sivakumar*, Mohammad Tanveer (2016). A Conceptual Approach For Design And Development Of Bio-Inspired Rudder For Fishing Vessel. *International Journal of Science, Environment.and Technology*, 5 (6): 4602 - 4606.
7. M. Sivakumar, Mohammad Tanveer* (2016). A conceptual approach for development of solar Powered aeration system in aquaculture farmsA Conceptual Approach For Design And Development Of Bio-Inspired Rudder For Fishing Vessel. International Journal of Science, Environment.and Technology, 5 (5): 2921 - 2925.
8. Karthikeyan. K, Somasundaram.p, Sivakumar.M , Thangavel. S (2017). Experimental Investigations on Automobile Air Conditioners working with R134a and R290/R600a as an alternative. Thermal Science 21(2), 2017, 515-522.
9. Mohammad Tanveer, M. Sivakumar (2017). Performance evaluation of Foxtail Amaranth (Amaranthusgangeticus) and GIFT tilapia grown in a recirculating aquaponics system, International Journal of Agricultural Engineering, 10 (2), October 2017
10. M. Sivakumar, Mohammad Tanveer (2017). Performance analysis of Nano Particle Eco Friendly chilling plant for fish Processing, International Journal of Agricultural Engineering, 10 (2), October 2017
11. M. Sivakumar, Mohammad Tanveer& S. Balasubramanian (2017). Nano Particle a Reliable source For Energy Efficient Eco Friendly Chilling For Fish Processing, RashtriyaKrishi, 12 (2), December 2017, 159
12. Mohammad Tanveer, M. Sivakumar & S. Balasubramanian (2017). Aquaponics A boon for food security, RashtriyaKrishi, 12 (2), December 2017

Honours and Awards

a. **Best Teaching Staff Award** 2017 from TNJFU
b. **Guiding 15 Ph.D scholars from Anna University**
c. Awarded as **Outstanding Reviewer by Elsevier Journal** "*Applied Thermal Engineering*"
d. Awarded as **Best Reviewer by Elsevier Journal** "*International Journal of Heat And Mass Transfer*"
e. "**A simple approach to CNC Programming**" got the *Copy Rights from Indian Government - (L-48414/2013)*
f. Bureau of Energy Efficiency – **Indian Government Accredited Energy Manager**
g. Tamil Nadu Electricity Board **(TNEB) Accredited Energy Auditor**

11) Dr.M.Kamalakannan, Assistant Professor

Individual BioData

Name : Dr. M. Kamalakannan

Designation : Assistant Professor

Address : No.468, Mangalankilar Street,
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Vellore District, Tamil Nadu - 631 00

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Qualification : M.Sc., M.Phil., B.Ed., PhDField of Specializatio

Major : Mathematics

Specializing field : Mathematical Modelling, Ocean Wave Modelling, Computational Fluid Dynamics, Numerical Analysis, Probability and Statistics, Differential Equations, Operations Research.

Experience (in years) : 8 months

Current projects 1

S. No.	Title of the Projects	Year	PI & Co- PI of the Projects	Funds (in Lakhs)	Funding Agency
1	Validation of different mathematical drying models for recirculated hot air dryer for dry fish production	2017-2018	Dr. M. Kamalakannan	0.65	TNJFU

Completed projects : **NIL**

Research publications (max – 10) :

(You may provide your recent best publications)

- **Kamalakannan. M**, Prabhakar. V, 2016. A fully quadrature method for the nonlinear four-wave interactions. International Journal of Pure and Applied Mathematics, vol. 109, No. 5, 67-74. (SCOPUS INDEX).
- **Kamalakannan. M,** Prabhakar. V, 2016. A numerical method for the nonlinear four wave interactions in finite depth. International Journal of Pure and Applied Mathematics, Vol. 109, No. 10, pp. 109-117. (SCOPUS INDEX).
- Prabhakar. V, **Kamalakannan. M,** 2016. A numerical study for the nonlinear four wave interactions in deep waters. International Journal of Control Theory and Applications, Vol. 9, No. 51, pp. 87-94. (SCOPUS INDEX).
- **Kamalakannan. M**, Prabhakar. V, 2017. A quadrature method for accurate estimation of nonlinear energy transfer in deep water. Far East Journal of Applied Mathematics, Vol. 96, No. 4, pp. 221-231.
- **Kamalakannan. M,** Kalyani. M, Prabhakar. V, Basantakumar Jena, Venkatesan. R, 2018. Assessment of Nonlinear Quadruplet Interactions for Measured Spectra in Deep Waters on the East Coast of India through Gauss Legendre Quadrature Method. **Springer Proc**. International Conference in Ocean Engineering, IIT Madras, Chennai, 17th-21st February, 2018.

Honours and Awards (Including patents)

- Qualified **GATE -** 2012 (210thRank in India Level).
- Qualified **SET -** 2012(State Eligibility Test, Tamil Nadu).

12. Dr.P.Karthickumar, Assistant Professor

Individual BioData

Name : Dr. P. Karthickumar

Designation : Assistant professor

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Virdhunagar (Dt)
Tamil Nadu – 626121

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Telephone (R) : 04563-244430

Mobile : 9994358736

Email : karthickumar@tnfu.ac.in

Qualification : B.Tech (Agricultural Engineering),
M.Tech (Food & Agrl. Process Engineering)
Ph.D (Food Process Engineering)

Field of Specialization :

Major : Food Process Engineering

Specializing field : 1. Non-destructive evaluation of food quality
2. Development of novel cost-effective gadgets
3. Waste utilization and Renewable energy technologies

Experience (in years) : 4 years

Current projects : 2

Sl.No.	Title of the Project	Year	PI & Co- PI of the Project	Funds (in Rs)	Funding Agency
1.	Establishment Of Fisheries Techno Park Cum Business Incubation Centre	2017-2018	Dr. S. Balasubramanian Dr. K. RathnakumarDr. P. Karthickumar Dr. N. Manimehalai	1,14,65,000	National Agricultural Developmen tProgramme
2.	Development and demonstration of innovative fisheries engineering interventions for the production	2017-2020			Tamil Nadu Innovation Initiative

	maximization infisheries industries in Tamil Nadu Sub projects 1. Development ofpower operatedfish dressing device 2. Design of lowcost fish processing machine 3. Development ofsmall scale automatic integrated powder making unit using fish/food waste		Dr. S. Balasubramanian Dr. N. Manimehalai Dr. P. Karthickumar Dr. S. Balasubramanian Dr. P. Karthickumar Dr. N. Manimehalai Dr. S. Balasubramanian Dr. N. Manimehalai Dr. M. SivakumarDr. D. Kesavan Dr. P. Karthickumar	10,10,000 13,50,000 30,60,000	

Completed projects : Nil

Research publications :

- Karthickumar, P., V.R. Sinija and K. Alagusundaram. 2018. Acoustic resonance technique for food quality evaluation. LAP LAMBERT Academic Publishing. ISBN (978-613-9-58364-5)
- Karthickumar, P., V.R. Sinija, K. Alagusundaram and B.K. Yadav. 2018. Developmentof a sorting system for fruits and vegetables based on acoustic resonance technique.Agricultural Mechanization In Asia, Africa and Latin America. 49 (1): 22-27.
- Karthickumar, P., V.R. Sinija and K. Alagusundaram. 2017. Non-destructive methodto determine the firmness of sapota based on acoustic resonance technique. Green Farming, 8(4): 233-237.
- Karthickumar, P. and C. Mercy Amrita. 2016. Application of Machine vision techniquein fish processing – An overview. Advances in Life Sciences Journal, 5(23): 10866- 10870.
- Karthickumar, P., V.R. Sinija and K. Alagusundaram. 2016. Food Quality Evaluation Using Acoustic Resonance Technique. In Natural products in food: Prospects and Applications. Edited by Jayanta Kumar Patra, Shakti Kanta Rath and Rasu Jayabalan, Studium press LLC, USA. 401-415p.
- Karthickumar, P., K.S. Pandian, P. Rajkumar, N. Surendrakumar and M. Balakrishnan. 2015. Development and Evaluation of a Continuous type Tamarind Deseeder. Agricultural Engineering, XL(2): 49-59.
- Karthickumar, P., V.R. Sinija, K. Alagusundaram and BK. Yadav. 2014. Acoustic Resonance Technique - A Promising Non-destructive Method for Detecting the Internal Defects in Brinjal. Research Journal of Agricultural Sciences, 5(4): 734-737.
- Karthickumar, P., V.R. Sinija, K. Alagusundaram and BK. Yadav, B.K. 2014. Effect of impact and sample holding methods of acoustic responses of brinjal. Trends in Bioscience, 7(3): 1740-1744.

- Mercy Amrita, C. and P. Karthickumar. 2016. Need for mobile application in fishing. International Journal of Science, Environment and Technology. 5(5): 2018-2022.
- Balasubramanian, P and P. Karthickumar. 2016. Biofertilizers and Biopesticides: A Holistic Approach For Sustainable Agriculture. In Sustainable utilization of natural resources. Edited by Prasenjit Mondal and Ajay K. Dalai. CRC Press, 257-285p.
- Mercy Amrita, C. and P. Karthickumar. 2016. Applications of machine vision technique in aquaculture – an overview. In Aquaculture development trends in India. Edited by Chelladurai. 116-140p. ISBN : 9789352675265

Honours and Awards

- Qualified NET in Agricultural Process Engineering conducted by ASRB
- Fellowship received during Ph.D. degree programme
- Paryavaran Ratana Award from the Indian Centre for Wildlife & EnvironmentalStudies - South Asia Region

Annexure - II

6.5.4.5. Examination and Evaluation Process:

The evaluation of students' performance is a central task of College administration. A brief report on examination and evaluation process for UG, PG be given separately mentioning external/internal components. System of evaluation should clearly be mentioned for UG, PG.

System of evaluation for UG

Examination Rules

i. Internal theory Examination:

The internal theory examinations shall be conducted by the respective course teachers as per the time table given by the Dean of the college. The duration for the internal theory examination shall be 120 minutes and 20 marks. Examination shall be conducted for 80 marks and converted to 20 marks. There shall be no examination week for the internal theory examinations. The examinations may be conducted in the examination hall.

ii. Internal Practical Examination :-

Final practical examination shall be conducted by the respective course teacher. The internal practical examination will be conducted between the 95^{th} and 105^{th} working days of a semester. For courses with theory and practical credits, the duration of internal practical examinations shall be three hours. The practical examination shall be conducted for 50 marks with the following marks distribution:

a. Record - 10marks*
b. Practical - 35 marks
c. Viva voce - 05 marks

*The evaluation of record may include the marks for regular submission / assignment / class room seminar / performance in the practical classes.

iii. Final External Theory Examination:

The final external theory examination shall be conducted after the completion of 105^{th} working day of each semester. The final theory examination shall be for eighty marks (80). The question pattern shall have two types namely "Part A" and "Part B".

Part A i) shall have 15 multiple choice questions carrying 1.00 mark each. Each question shall have four choices with one right answer and ii) shall have 10 match the following

with 0.50 marks each. All the questions are compulsory. Questions shall be selected from all the five units of each course equally. Under Part B, there shall be five units and every unit shall have three questions out of which two questions (6 marks each) should be answered.

Question scheme:

Part A.

1. Multiple choice Questions. (15 x 1.00=15.00 marks)
2. Match the following (10 x 0.5 = 5 marks)

Part B.

Unit I. Answer any two of the following. (2/3 x 6 = 12.00 marks)

a.

b.

c.

Unit II. Answer any two of the following. (2/3 x 6 = 12.00 marks)

a.

b.

c.

Unit III. Answer any two of the following. (2/3 x 6 = 12.00 marks)

a.

b.

c.

Unit IV. Answer any two of the following. (2/3 x 6 = 12.00 marks)

a.

b.

c.

Unit V. Answer any two of the following (2/3 x 6 = 12.00 marks)

a.

b.

c.

Study holidays:

One day study holiday shall be given in between two examinations. Hence, there is no study holidays declared separately. If the next day happens to be Sunday, the successive working day shall be considered as examination day. However, this shall not be applicable for declared government holidays.

The examinations shall be conducted for two hours duration from 10.30 am to 12.30 p.m. Hall Superintendents, Invigilators and the students shall report at the examination hall 15 minutes prior to start of examinations. Grace period of any kind beyond the duration prescribed should not be given.

Absenting for final external theory examinations:

If any student absents for final external theory examinations**,** with minimum attendance of 80% in theory and practical separately, it shall be treated as failure (F) and the students shall be permitted for arrear examination.

Distribution of marks for calculation of grade point of a course:

The distribution of marks for calculation of grade point of a course is as follows:

a. Course with theory and practical credits alone

Examination	**Marks**
Internal Theory (I & II)	20
Final External theory examination	80
Practical	50
Total	**150**

The examinations for courses with theory and practical shall be conducted for 150 marks and converted to 100 marks in the marks statement.

b. Course with theory credits alone

Examination	**Marks**
Internal Theory	20
Final External theory examination	80
Total	**100**

c. Courses with practical credits alone

For courses with practical credits alone, the duration of internal examinations shall be three hours and conducted for 50 marks with following marks distribution.

Examination	Marks
Internal Practical	35
Record	10
Viva voce	05
Total	**50**

The examinations for course with practical only shall be conducted for 50 marks and converted to 100 marks in the marks statement.

Internal Examinations marks:

The Internal Examination marks should be made known to the students within seven days after the completion of Internal Examinations along with the corrected answer papers. The mark statement in the prescribed format should be sent to the Dean of the College through the Students' Coordinator after completion of all the internal examinations.

Minimum pass in a course:

A student shall obtain a minimum of 50% marks in theory and practical separately to pass in a course. Similarly for courses with either theory or practical credits alone, a minimum of 50% marks is required to pass in a course.

Supplementary examination:

There shall be supplementary examination for internal theory and internal practical examinations for students absenting themselves for a genuine reason with the recommendation of the students' coordinator. The students who absent themselves for internal theory examinations may be allowed to write supplementary examination before final practical examination on payment of a fine of Rs.500/- per examination. Supplementary practical examination shall be conducted before the completion of external theory examinations. The marks obtained in the first attempt for record shall be taken for supplementary practical examination.

Arrear Examinations:

There shall be arrear examination for students secured less than50% marks separately for theory and practical in a course. The arrear examination shall be conducted for the external theory or internal practical examination in which the student secured less than 50% marks. The marks obtained in the first attempt for record shall be taken for arrear practical examination. The fees shall be Rs.500/- per course. There shall be no arrear examination for internal theory examination.

Requirements for B.Tech (F.E.) degree:

A student undergoing course of study leading to award of **B.Tech (F.E.)** shall pass the course and complete the minimum number of credit hours prescribed there for, by the Academic Council from time to time by obtaining a minimum GPA of 5.00 for passing a course and OGPA of 5.50 on 10.00 point scale system for obtaining a degree.

To calculate the grade point of a course, the marks obtained for theory (100 marks) and practical (50 marks) will be converted to 100. The percentage of mark in a course is then divided by 10 and expressed in a 10 point scale up to one decimal place.

Credit point of a course is the product of credit hours and grade points obtained by the student in a course. Example, if in a course with 2+1 credit, if the grade point is 8.5, then the credit point of the course is 3 x 8.5 = 25.5.

Credit point average is the quotient of the total credit points obtained by the student in various courses at the end of each semester divided by the total credit hours taken by the student in that semester. The grading is done on a 10 point scale.

Overall grade point average (OGPA) is the quotient of cumulative credit points obtained by a student in all the courses from the beginning of the first semester of the degree divided by the total credit hours of all the courses completed up to the end of the 6^{th} semester. The OGPA shall be rounded to two decimals taking the third decimal alone into consideration. Marks or grade obtained in ELP, All India Study Tour and IPT will not be taken into account for OGPA calculation.

Index of grading:

OGPA of 5.50 to 7.49	– Second class
7.50 to 8.09	– First class
8.10 and above	– First class with distinction

- For securing first class and distinction the student should have completed the degree programme without recording "F" in any course.
- Students recording "F" grade in one or more curses and who have secured an OGPA of 7.5 and above shall be awarded First class provided they complete the degree programme within the minimum prescribed period.
- Students shall be given any number of attempts to clear the arrear subject keeping the checks for movement from one year to another.

In addition to the provisions made in TNJFU Regulations 32.4.7, students shall not be permitted to register for VII semester (Student READY programme) of fourth **B.Tech (F.E.)** without passing all the courses in III and IV semesters of second year. Students shall not be permitted to register for VIII semester of fourth B.F.Sc without passing all the courses in I to VII semesters of the degree programme.

Students have a provision for applying for re-totalling after paying a fee of Rs.500 and revaluation after paying Rs.1000/.

Attendance

The attendance eligibility applies only for final external theory Examination and not for Internal Examinations. The attendance will however be reckoned from the day of the instruction (i.e. second day of registration week) as per the academic calendar. The attendance should be maintained by the course teacher and the certificate to this effect shall be sent to the University along with attendance in prescribed proforma well in advance, at least 5 days before the issue of hall ticket for semester external final theory examination. Hall Ticket will be issued by the Controller of Examination, based on the prescribed application from the candidate duly filled in. The shortage of attendance particulars should reach the "Controller of Examinations at least three days prior to issue of Hall Ticket. No student will be issued with a hall ticket unless they produce clearance certificate from the competent authority of accounts of Hostel administration.

Instructional Holidays

Instructional holidays shall be declared by the Dean of the College for the activities of students' association /academic events/ any in-house events if necessary and intimated to the University for the extension of the semester working days. These instructional holidays however should not exceed 10 days in an academic year.

Study Tour (0+2):

There shall be study tour (in and outside State) as part of StudentREADY programme to be performed during VII Semester of **B.Tech (F.E.)** degree programme as per the guidelines of Student READY Programme. This study tour shall be for 4 weeks' duration with 0+2 credit load. This four weeks' duration can be split into two spells of one week of state-wide tour and three weeks of outside the State tour with the same credit load. The number of accompanying teaching staff members shall be two, preferably the coordinator and one of the counsellors of concerned batch. The participation in the study tour is mandatory for all the students. On extraordinary circumstances, student shall be permitted to forfeit the tour on medical reasons or withdraw partially from performing the tour on health grounds. Such cases shall be reported and recommended by the accompanying staff to the Dean of the College for permission. For those who have not attended/partially attended/ shall be permitted to undergo lab work/farm work for the period of absence.

The minimum marks to pass in the Study Tour examinations shall be 50 and shall not be accounted for OGPA calculations. If any student fails in the Study Tour examination, shall appear for supplementary examination to be conducted between 3 and 5 working days after main Study Tour examination on payment of a fine of Rs,1000/-. Student shall be permitted to appear for only one supplementary examination. If any student fails in the supplementary

examination should repeat the Study Tour along with ensuing batch of students and will not be permitted to register for VIII semester of fourth **B.Tech (F.E.)** degree programme.

Summer vacation:

Summer vacation shall be declared between 1st and 15th May every year for all **B.Tech (F.E.)**, students.

Semester holidays:

The semester holidays shall be declared for a period of 10 days oras decided by the University at the end of each semester.

System of evaluation for PG

Evaluation or Examination

The detailed guide lines for the conduct of examination (internal and final), Comprehensive Qualifying Examination, research credit evaluation, grading, recording, preparation of mark lists, transcripts etc. Circulated from time to time by the University shall be followed. The schedule of examinations shall consist of internal and final examination in a semester for course work and for research and seminar credits, the final evaluation will be done at the end of the semester concerned.

(1) Internal theory Examination

The internal theory examination would invariably be conducted on completion of 70th working day of the semester. The internal theory examinations shall be conducted by the respective course teachers as per the time table given by the Faculty Dean and guidelines issued by the University from time to time. It may be conducted only for theory for a duration of 45 minutes for a total mark of 20 consisting of questions of objective pattern for 10 marks and questions of subjective pattern for 10 marks. There shall not be any preparatory holiday for internal examination. The portions for the examination shall cover the topics completed from1st working day to till the date of examination.

(2) Internal Practical Examination

The practical examination shall be conducted by the course teacher. For courses with theory and practical credits, the duration of internal practical examinations shall be three hours. The internal practical examination will be conducted before the start of final theory examination. The practical examination shall be conducted for 50 marks.

(3) Final theory external Examination

It shall be a University examination comprising of theory conducted at the end of a semester. The theory examination shall be for 70 marks. The question paper for theory examination shall be set by the external examiners. However, the answer scripts of the courses shall be evaluated by the staff in the concerned department appointed by the Controller of Examinations internally.

The question type shall include A. Define (5outof6) for10 marks, B. Short notes (3out of

4) for15 marks C. Essay type (3out of4) for 45 marks. The duration of the examination is two hours.

(4) Question scheme.-

I A. Define/ Explain the following (any FIVE only) (5x 2 = 10)

1.

2.

3.

4.

5.

6.

A. Write short notes (any THREE only) (3 x5 = 15)

1.

2.

3.

4.

C. Write essay (any THREE only) (3x15=45)

1.

2.

3.

4.

(5) Question paper setting.

The question paper shall be obtained from one external expert from the panel list of five experts given by the Head of the department. External expert shall provide two set soft question papers specifically mentioning the Unit number and the line from which the question was taken in the syllabus. Of the two set so question papers, one question paper shall be finalized by the Controller of Examinations. Unit number and line in which the question is taken should be clearly stated by the question setter while preparing the question paper.

(a) Termpaper-A term paper may be given for each course by the course teacher and it may be evaluated for a maximum of ten marks. (10)

(b) Distribution of marks for calculation of grade point of a course.-The distribution of marks for calculation of grade point of a course is as follows.-

Course with theory and practical

Examinations	Marks
Internal theory	20
Final external theory	70
Practical 1.Examination-30 2.Record -10 3.Vivavoce -10	50
Term paper	10
Total	**150**

Course with theory alone

Examinations	Marks
Internal theory	20
Final external theory	70
Term paper	10
Total	**100**

Courses with practical alone

Examinations	Marks
Internal Practical	30
Record	10
Viva-voce	10
Total	**50**

Theexaminationsforcourseswithpracticalonlyshallbeconductedfor50marksand converted to 100 marks in the marks statement.

(6) Supplementary Examination

There shall be supplementary examination for internal theory examinations for students absenting themselves for a specified genuine reason with there commendation of the students coordinator. However, the Faculty Dean has the discretionary power either to permit or reject the application after critically assessing the genius of the reason(s) for absence. The students who absent themselves for internal theory examinations may be allowed to write supplementary examination before final practical examination on payment of a fineofRs.200/- (Rupees two hundred only) per examination.

(7) Arrear Examination

There shall be arrear examination for students who secured less than 60% marks separately for theory and practical in a course. The arrear examination shall include external theory for 70 marks and internal practical for 50 marks. The marks obtained in the first attempt

for record shall be taken for arrear practical examination. The fees shall be Rs.200 (Rupees two hundred only) per course. There shall be no arrear examination for internal theory examination and internal practical examination.

(8) Comprehensive Qualifying Examination (CQE)

This is a mandatory examination to be taken up by all M.Tech students after completion of 90 working days of this second semester. The students should not be permitted to register for more than five research credits before successful completion of CQE. The details of conduct of CQE, evaluation details and method of conduct of viva- voce shall be as per the guidelines issued by the University from time to time. The question paper for CQE for M.Tech programmes shall be set by the external examiner. The evaluation of answer book sand conduct of viva-voce shall be done by the Advisory Committee. The results for CQE shall be grade dissatisfactory/unsatisfactory. The qualifying mark for" satisfactory" shall be 60%. In case of unsatisfactory performance, the student has to reappear for the CQE after three months and such re-appearances are restricted to two. In total, the appearances are restricted to three. In such case, the student has tore- appear for the qualifying examination on payment of Rs.500/- (Rupees five hundred only) per appearance.

(9) Evaluation of M.Tech. Seminars:-

The **M.Tech.** Seminar is/are mandatory for all PG students with a credit load of 1+0 for **M.Tech.** Students, respectively. The Advisory Committee should assign the seminar topics during the beginning go f a semester. The students are expected to prepare a seminar paper after carefully reviewing the literature sands such other materials. The advisory committee shall evaluate the performance of the seminar credits registered by the students at the end of semester. The evaluation should be conducted during the last fortnight of the semester when all the member so for the Advisory Committee are available. Normally the student is not expected to absent themselves for seminar credit evaluation. Under extraordinary circumstances a late evaluation within ten working days from the last working day of the semester may be permitted by the Faculty Dean of the college concerned on payment of a fine of Rs200/-(Rupees two hundred only). In circumstances, where a member of the Advisory Committee may not be available necessary permission has to be obtained for conduct of evaluation in the absence of one member from the Faculty Dean of the College concerned. If more than one member may not be available, permission has to be obtained from the University. In circum stances where the Chairman is not available for evaluation, late

evaluation may be permitted by the faculty Dean within ten working days from the last working day. In extraordinary circumstances where the chairman may not be available even within this period, the head of department can act as Chairman after obtaining permission from the Faculty Dean of the College concerned. In the event of HOD acting as Chairman and not available within this period, the Faculty Dean/nominee of the Faculty Dean can act as Chairman and conduct evaluation. The performance of the student should be evaluated by the Advisory Committee as per the following norms.-

Particular	Marks
Coverage of literature	40
Presentation	30
Use of AV aids	10
Capacity to participate in the discussion	20
Total	**100**

A time schedule regarding the conduct o f seminar has to be prepared by the Chairman and the same has to be communicated to the respective individuals and Advisory Committee well in advance. In case of failure, the student has tore-register the credit in the subsequent semester.

(10) Evaluation of research credit: - The performance of the research credit registered by the students during the semester shall be evaluated by the Advisory Committee at the end of each semester preferably during the last week of semester. The evaluation should be conducted by all member soft he Advisory Committee. For research credits, Grades will not be awarded. Advisory Committee can give an evaluation statement "Satisfactory / Not Satisfactory" mentioning lack of requirements like attendance/ adherence to the programme/ satisfactory progress, etc., to proceed to next semester. Research credits will not be included for OGPA calculation.

In the final semester in which the student is submitting the thesis, evaluation of the research credits by the Advisory Committee and submission of thesis by the student may be done on a convenient day during last week of semester in which all members are present on completion of mandatory attendance limit of 80 % and 100 % completion of work committed to do at the beginning of the semester by the student. Final research semester will be evaluated as "Satisfactory/ Not Satisfactory". In case of "Not Satisfactory", a grade of "Incomplete" shall be awarded and the student ha store-register for the same credit loads of research again in the sub sequent semester. The student has to get the permission of Faculty Dean of the College concerned for re-registration of incomplete research credits. In case of re-registration of same credit load of research

after second time, the matter may be referred to the Deans' committee and the University. Normally the students are not expected to absent themselves for research credit evaluation. Under extraordinary circumstances ala teuation within ten working days from the last working day of the semester including final semester in which student is submitting thesis may be permitted by the Faculty Dean of the College concerned on payment of a fine of Rs.200/ (Rupees two hundred only)**.** However, it is the prerogative of the Faculty Dean to decide whether, the circumstances for late evaluation stated by the student really warrants it. In case of wilful absence, the Advisory Committee, in consultation with Faculty Dean of the College concerned, may award incomplete grade. Normally all members of the Advisory Committee should present themselves for evaluation of research credit. Under extraordinary circumstances in which a member of the Advisory Committee may not be available, necessary permission has to be obtained for conduct of evaluation in the absence of one member from the faculty Dean of the College concerned. If more than one member may not be available, permission has to be obtained from the University. In circumstances where the chairman is not available for evaluation, a late evaluation may be permitted by the Faculty Dean within ten working days from the last working day. In extraordinary circumstances where the Chairman may not be available even within this period, the head of department can act as chairman after obtaining permission from the Faculty Dean of the College concerned. In the event of HOD acting as Chairman and not available within this period, the faculty Dean/ nominee of the Faculty Dean can act as Chairman and conduct evaluation. If a student has not got mandatory attendance limit of 80%, a grade of incomplete may be awarded and the student has to re-register for the same credit load of research again in the subsequent semester. The student this to get the permission of Faculty Dean of the College concerned for re-registration of incomplete research credits. In case of re-registration of same credit load of research after second time, the matter may be referred to the Dean's committee and University.

(11)Final viva – voce examination.-On the basis of recommendation for acceptance of thesis, the University shall forward the reports of the external examiner to the Chairman of the Advisory Committee for conducting final viva- voce examination for the postgraduate students. The thesis shall be sent to one external examiner for M.F.Sc., degree and two external examiners for Ph.D., programmes. The final viva-voce shall be conducted by the External Examiner along with the Advisory Committee for M.F.Sc., programmes,

whereas for Ph.D. programmes, the final viva-voce shall be conducted by one of the External Examiners decided by the University along with the Advisory Committee. The details and method of conduct of final viva-voce shall be as per the guidelines issued by the Faculty Dean and University from time to time. The date for final viva- voce should be fixed by the Chairman taking into account the availability of all member soft he Advisory Committee after verifying the fact regarding carrying out correction sand suggestions specified by the external examiners. Normally all the member soft he Advisory Committee should be present for final viva-voce. In case of extraordinary circumstances where a single member may not be available, necessary permission has to be obtained from the Faculty Dean of the College concerned. If more than one member may not be available the final viva-voce examination has to be postponed.

In circumstances, where the Chairman of the Advisory Committee may not be available for a sufficiently longer duration for the conduct of final viva- voce, the Faculty Dean of the College concerned may nominate from a panel of three suitable persons from the discipline in which the student is majoring to the University and the person selected by the University may act as Chairman for the conduct of final viva-voce examination. During the final viva-voce, the student shall defend the thesis in front of Advisory Committee, Head of the department, invited staff, students and external expert. The degree shall be awarded on the unanimous recommendation of the examining committee with regard to the thesis itself and the performance of the student in the final viva- voce examination. The performance shall be evaluated as Satisfactory/ Un satisfactory. The opinion of the majority member soft he Advisory Committee shall be taken into account. If difference of opinion arises among the members, Chairman of the Advisory Committee's decision shall be the final. In case of failure, the student has to reappear for viva- voce examination after three months on payment of a fine of Rs.500/-(Rupees five hundred only).

(12) Unfair means during examinations:-The Faculty Dean of the College shall be responsible for dealing with all cases of “use of un fair means" in the various examinations. The phrase, “use of unfair” means includes possession of any information or material by the student, talking to other students, copying from other students or from printed or written material etc. The Invigilator concerned, on finding the use of unfair means by any student, may take the answer scripts of the student and the material evidences, if any. The student shall be sent out of the examination hall immediately. The Invigilator concerned shall report each

case of unfair means direct to the Faculty Dean immediately with full details of the incident, answer scripts and the available evidences. The Faculty Dean, on receipt of the report, may give an opportunity to the concerned student to explain the case. Considering all the available evidences provided by the invigilator and the explanations given by the student, the Faculty Dean shall take appropriate action immediately. The penalty shall be as indicated below.-

(a) A student found using unfair means during internal examinations should be deemed to have failed in that course;

(b) A student found using un fair means during the semester final external examinations should be deemed to have failed in that course. In such case, the student shall not be permitted to take the remaining examinations, if any, in that semester and shall also be deemed to have attempted and failed in the remaining examinations;

(c) The Faculty Dean shall report each case falling under clauses (a) and (b) above immediately, after passing orders to the University;

(d) For using unfair mean sofa serious nature such as ignoring the repeated instructions of Invigilator or abusing or threatening or assaulting the Invigilator, warranting higher penalties that those indicated in clauses (a) and(b) above, the Faculty Dean, besides treating the students as failed in all the courses the student registered in that semester, may further debar the student for the next semester and succeeding year and the fact in formed to the University based on their commendations of the enquiry committee constituted by the Faculty Dean. If further or more severe punishment is felt necessary, the Faculty Dean shall immediately inform the University about the full details of each together with all the material evidence, if any, and his recommendation. The explanation or representation of the student, if any, may also be sent. The Vice-Chancellor after examining the case, may debar the student for further period or permanently. The decision of the Vice-Chancellor is final;

(e) The parent or the guardian of the concerned student shall be informed of any punishments awarded to the student and there as on there for.

(13) Scrutiny of marks.-The student may apply to the Registrar through the Faculty Dean of the College concerned for re-totalling/ revaluation of answer papers in the prescribed format not later than ten working days after declaration of the results. The fee for the same shall be Rs.100/-(Rupees one hundred only) for re-totalling andRs.200/-(Rupees

two hundred only) for revaluation for each course.

Thesis:-

(1) **Thesis.-**The thesis should consist of major sections namely introduction, review of literature, materials and methods, results and discussion, summary and conclusions and bibliography. The thesis for the **M.Tech.** Degree should be of such a nature as to indicate the student's potentialities for conducting research.

(2) **Topic.-**The thesis shall be on a topic falling within the field of the major subject sand shall be the result of the in dependent work of the students.

(3) **Change of topic:-** The topic once chose hand approved for research credit evaluation should not be normally changed. However, on extra ordinary circumstances where such a change is warranted it should be done before completion of 30 working days in the third semester. On their commendation of the Advisory Committee, such changes can be approved by the Faculty Dean.

(4) **Change of title.-**The title given in the synopsis shall be taken as final title and title given at the time of approval of the programme of research shall be taken as tentative. However, change in the area of research and objectives are subject to modifications as specified in clause 10(3).

(5) **Synopsis: -** Submission of thesis should be preceded by submission of synopsis to the University between 55^{th} and 60^{th} day of the third semester. The synopsis should not exceed five pages and should consist of brief report of the worked one. The synopsis should be accompanied by a sealed cover consisting of a panel of five experts for the University to select external expert(s) for evaluation. The approved programme of research work should also be furnished along with the synopsis.

(6) **Guidelines.-** The detailed guidelines issued by the University in the preparation of the thesis shall be followed for M.Tech thesis.

(7) Submission.-The thesis shall be submitted on any day among the last five working days of the semester. Two copies of thesis for M.Tech. should be submitted in paperback. After its final approval and after incorporating the suggestions of examiners if any, five copies (Six copies for ICAR fellowship holders) of thesis should be bound and be submitted to the University. It should be hard bound only after completion of final viva –voce and

carrying out the corrections suggested by the external experts.

(8) **Late submission:-**The students shall submit the **M.Tech.** thesis on any day among the last five working days of the final semester. The students who could not submit their theses on the last five working days should not been valuated forth research credits. However, students failing to submit the theses on the last five working days shall submit the theses during any time in the extended semester after paying a fee of Rs.500/- (Rupees five hundred only) as late fee for thesis submission. In this case, a proposal should be sent by the Advisory Committee to University through Dean of the College concerned for permission for submission of thesis at any time during the extended semester. In circumstances where a student is not able to submit even after the extended period, the grade" in complete" may be given and there search credits already registered in the last semester has to be re-registered. However, in circumstances where the student is ready with the thesis but the Chairman or more than one Advisory Committee member share not available on last five working days of the semester, the faculty Dean of the college concerned may decide the date of submission and evaluation under intimation to the University.

(9) **Publications.-**The student share allowed to publish their work even before submitting the thesis. The copies of such publication should been closed with thesis while submission. Manu scripts of at least one research paper should be submitted along with the thesis during final submission of M.Tech., thesis one research paper should have been accepted in peer reviewed / NAAS rating journal and another one submitted in peer reviewed journal or one patent filed.

(10) **Rejection of M.Tech. thesis:-** The M.Tech thesis rejected by one external expert may be sent to second external expert in the panel on their quest of the Advisory Committee. If these external expert accepts the thesis forward of the degree, then the final viva- voce may be conducted for award of degree. If the second expert also rejects the thesis, the thesis is considered as rejected and the student has to re-register the research credits and carry out necessary works and corrections after a gap of one semester and re submit the thesis.

(12) **Final submission.-**After the conduct of the final viva-voce, the Chairman of the Advisory Committee should forward the hard bound thesis along with a certificate for carrying out corrections suggested by the external experts for award of the degree.

Annexure -A

TAMIL NADU DR. J. JAYALALITHAA FISHERIES UNIVERSITY

COLLEGE OF FISHERIES ENGINEERING, NAGAPATTINAM

Feedback form

Batch:

Semester:

Rating of the instructor (0 -25)

Course details	Syllabus coverage with practical examples	Instructor stimulated student interest	Instructor effectively used time	Instructor was available and helpful

Annexure- B

TAMIL NADU Dr. J. JAYALALITHAA FISHERIES UNIVERSITY

No.A/Estt./CoFE/NGPT/BWD/2019

Office of the Dean
College of Fisheries Engineering
Vettar River View Road,
Nagapattinam - 611 002

Dated:24.04.2019.

Internal Communication

Sub: CoFE – NGPT- Biological waste disposal – Committee constituted - Intimation - Regarding.

As per the directions of the University, the Biological Waste Disposal Committee is constituted for the College of Fisheries Engineering, Nagapattinam for the disposal of biological waste with the following committee members

S.No.	Name of the Committee	Committee members
1	Dean, CoFE, Nagapattinam	Chairman
2	Dr.D.Kesavan, Assistant Professor	Member
3	Deputy Warden (Boys)	Member
4	Deputy Warden (Girls)	Member

24/04/2019

Dean i/c.,
CoFE, Nagapattinam

To
The Individuals Concerned
Notice Board (Boys & Girls Hostel)