



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

DEPARTMENT OF ZOOLOGY

Introduction

The Department of Zoology is dedicated to embracing experiential and participatory approaches, utilizing teaching-learning methodologies that provide a deep and engaging learning experience for students in the digital age. Adhering solely to conventional lecturing, content delivery, and traditional formative assessment procedures is no longer adequate for evaluating learners. Instead, the teaching-learning process must be student-focused, emphasizing participatory and experiential learning to truly resonate with the students and the dynamic nature of zoological studies.

	2.3.1(A) PARTICIPATIVE LEARNING	2.3.1(B) EXPERIENTIAL LEARNING
1	ZOOLOGY ASSOCIATION DAY	INTRODUCTION TO BIOINFORMATICS AND BASIC COMPUTATIONAL SKILLS
2	SPARK LECTURE SERIES ON DRUG DESIGNING FOR COVID AND CANCER	WORKSHOP ON R PROGRAMMING FOR DATA ANALYSIS
3	INTERCOLLEGIATE WILDLIFE QUIZ	LIFE SCIENCE NET COACHING PROGRAMME (L.S.N.C.P.)
4		FOREST ECOSYSTEM VISIT
5		COASTAL ECOSYSTEM VISIT
6		MANGROVE AND INTERTIDAL ECOSYSTEM VISIT
7		INSTITUTIONAL VISIT, KOCHI



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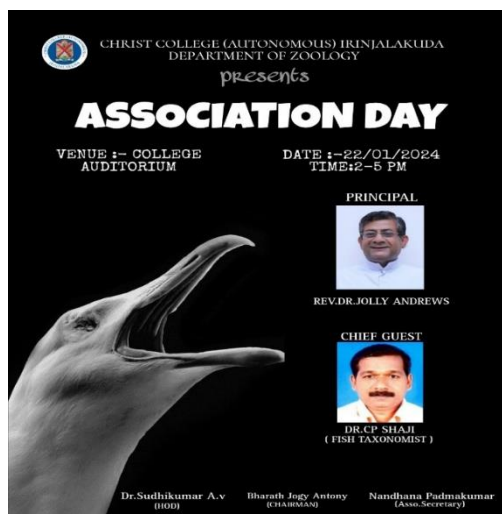
PARTICIPATIVE LEARNING

1. ZOOLOGY ASSOCIATION DAY

The Zoology Association Day, 2024 was conducted in the college auditorium. The chief guest of the day was Dr. C. P. Shaji, fish taxonomist. Other dignitaries included the HoD the Union Chairman and the Association Secretary. The programme commenced at 2 PM with the welcome speech by the HoD Dr. Sudhikumar A.V. followed by the lighting of the auspicious lamp by the dignitaries. The Union Chairman, Mr. Bharath Jogy Antony felicitated the ceremony with his eloquent words. Later, Dr. Shaji conducted an interactive session, captivating everyone with his engaging presentation and stimulating words. The cultural programmes were held subsequently, where the students showcased their exceptional talent. The programme concluded at 4 PM with a vote of thanks by the Association Secretary, Ms. Nandhana Padmakumar.

Programme Objective: To unravel the beauty of Zoology

Programme Outcomes: Students interacted with Dr. C. P. Shaji, a fish taxonomist, and other dignitaries, fostering valuable connections and potential research collaborations. The event celebrated zoology, reinforcing students' interest in the field.





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2. SPARK LECTURE SERIES ON DRUG DESIGNING FOR COVID AND CANCER

The Department of Zoology has initiated the ‘Spark Lecture Series’ that explores emerging trends and breakthroughs in the field, providing students with a dynamic platform to engage with cutting-edge research and advancements in life science.

‘Spark Lecture Series on Drug Designing for Covid and Cancer’ was held at Fr. Jose Thekkan seminar hall. The resource person, Dr. Irimpan I. Mathews, (a Christ Alumni), a lead scientist, at SLAC National Accelerator Laboratory, Stanford University, and an expert in the field, shared his experiences during the COVID pandemic, how the research team faced the crisis, and the journey from being a student to a scientist. He also shared his insights into computational approaches and methodologies employed in drug discovery to combat COVID-19 and cancer. Students and faculty gained a deep understanding of the intricate process involved in therapeutic interventions, bridging the gap between theoretical knowledge and practical applications.

Programme Objective: To bridge the gap between theoretical knowledge and practical applications

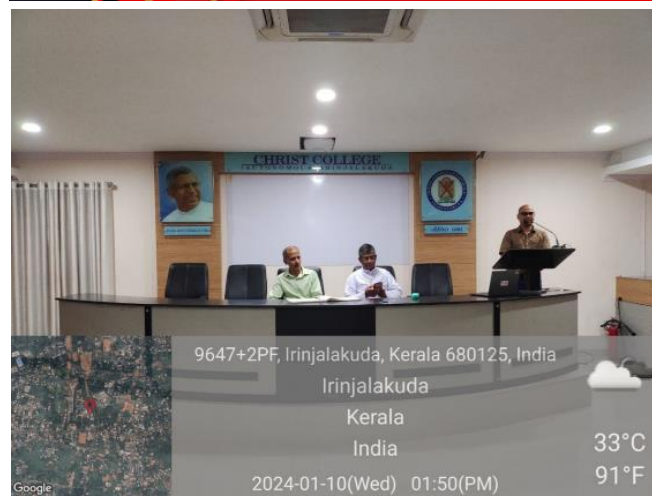
Programme Outcomes:

1. Practical Insights: Students gained practical insights into computational approaches and methodologies used in drug discovery. This knowledge bridges the gap between theory and real-world applications, enhancing their understanding of therapeutic interventions.

2. Exposure to Expertise: Interacting with Dr. Irimpan I. Mathews, an expert in the field, provided students with exposure to cutting-edge research and breakthroughs. Learning from a lead scientist at Stanford University inspires academic curiosity and professional growth.



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3. INTERCOLLEGIATE WILDLIFE QUIZ

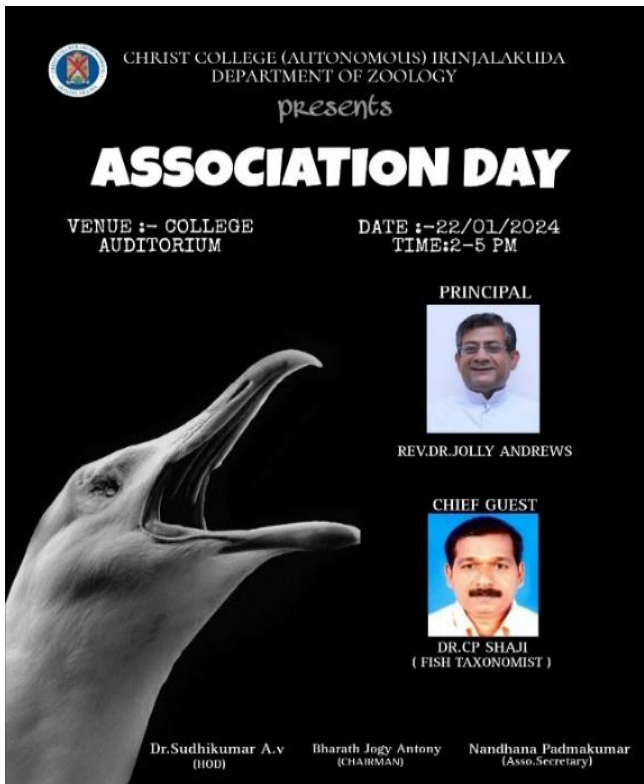
An Intercollegiate Wildlife Quiz competition was conducted at the college which was organized by WTI (Wildlife Trust of India) and department of Zoology. It was a part of the “SAVE THE WHALE SHARK CAMPAIGN” by WTI. The quiz was held at St. Chavara Seminar Hall. Dr. Bijoy C was the quiz master. Mr. Sajan, coordinator of WTI was also present throughout the quiz competition. There was a preliminary round for the competition and 4 out of 14 teams were selected for the finals. The finals were exciting and informative for both participants and the audience. The first position was secured by Vivek Vijayan and Vishnu S of SNGS College, Pattambi and Alvin Alfred and Meenakshi Baiju of St. Thomas College, Thrissur won the second prize. The third prize was won by Ashika Farsana and Anjoe Shaiju of Christ College, Irinjalakuda. All the participants including the audience won exciting prizes given out by WTI.

Programme Objective: To raise awareness about whale shark conservation.

Programme Outcomes: The Intercollegiate Wildlife Quiz competition organized by WTI and the Zoology department is enhanced knowledge and awareness. By participating in the quiz, zoology students gained insights into wildlife conservation, whale sharks, and related topics. This exposure contributes to their academic growth and fosters a deeper understanding of ecological issues.



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EXPERIENTIAL LEARNING

1. CERTIFICATE COURSE: INTRODUCTION TO BIOINFORMATICS AND BASIC COMPUTATIONAL SKILLS

A workshop on “Introduction to Bioinformatics” was organized by Department of Zoology, Christ college Autonomous, Irinjalakuda. Fr. Jijo Francis, faculty of Department of Zoology served as the workshop coordinator. Ms. Athira and Ms. Smrithi, research scholars from Institute on Communicative and Cognitive Neuroscience (ICCONS), Shoranur were the resource persons. The workshop provided the students a hands-on training on various topics under the field of Bioinformatics. The topics discussed were; Introduction to Bioinformatics, Familiarization with biological databases, Sequence alignment for nucleotides and proteins, Multiple sequence alignment, Phylogenetic analysis, Gene prediction methods.

The workshop provided students with an opportunity to explore the basics of bioinformatics. It provided a foundational understanding, valuable for future research pursuits. Students were provided with an e certificate.

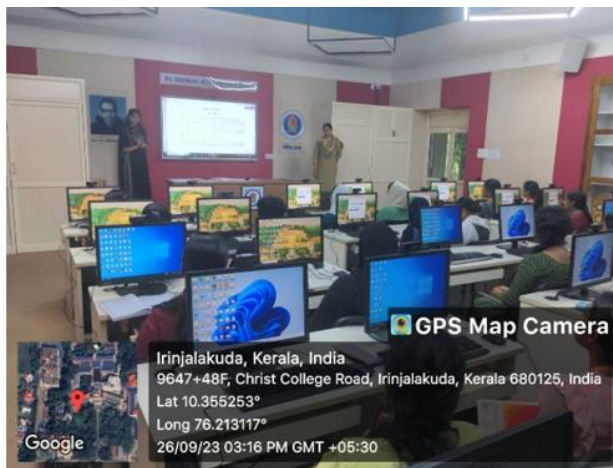
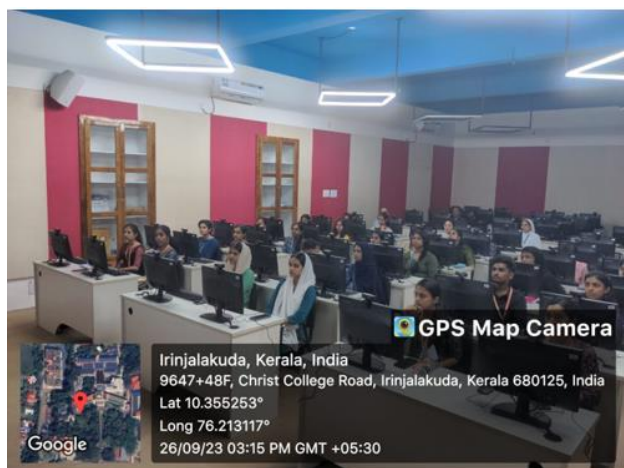
Programme Objective: To familiarize students with various topics in the field of bioinformatics.

Programme Outcomes:

- 1. Hands-On Training:** Students gained practical experience by participating in hands-on sessions covering topics like sequence alignment, biological databases, and gene prediction methods. This exposure enhances their skills and prepares them for future research endeavors.
- 2. Foundational Understanding:** The workshop provided a foundational understanding of bioinformatics, bridging theoretical knowledge with practical applications. This knowledge is valuable for students’ pursuing careers in life sciences and research.



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INTRODUCTION TO BIOINFORMATICS AND BASIC COMPUTATIONAL SKILLS

COURSE OUTCOME:
Bioinformatics is a multidisciplinary field that combines biology, computer science, mathematics, and statistics to manage, analyze, and interpret biological data, particularly in genomics and molecular biology. Its importance is reflected in various scientific research, healthcare, and industry aspects. This course will enable the student to have an idea of the essentials for addressing complex biological questions, advancing medical research, and making informed decisions in healthcare, agriculture, and environmental science. It empowers scientists and researchers to harness the vast amounts of biological data generated in the modern era and turn it into valuable knowledge and insights.

Name of the Course:
INTRODUCTION TO BIOINFORMATICS AND BASIC COMPUTATIONAL SKILLS

Offered by: Dept of Zoology
Course Co-Ordinator: Fr. Jijo Francis
Course Instructors: Ms Smriti Menon and Ms Aadhira R.
Course Structure: (30 Hour Module including theory and practical sessions)
Course fee: 1500/-
Eligibility Plus Two
Course Objective:
The students will better understand the following concepts: Functional Genomics, Structural Biology, Phylogenetics and Evolutionary Biology, Comparative Genomics, Data Integration and Biological Databases.





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2. WORKSHOP ON R PROGRAMMING FOR DATA ANALYSIS

A practical workshop on R programming for data analysis was organized by the Department of Statistics (Aided and Self-financed), in collaboration with IQAC, for M.Sc. students and Ph.D. scholars from the Zoology department. The three-day workshop started each day at 9 am and continued until 4:30 pm, offering participants a day full of immersive learning experiences. The aim was to ensure a comprehensive exploration of R programming concepts for data analysis.

The program was inaugurated by the college principal, Fr. Dr. Jolly Andrews C M I. Dr. Davis Antony M, Head of the Statistics Department (Self-financing), along with Ms. Geethu and Ms. Sridevi, provided insights into the program. Dr. Abhilash Peter, faculty in the Department of Zoology, expressed gratitude in the vote of thanks. The objectives of R programming emphasized its versatility, flexibility, and effectiveness in addressing diverse needs in data analysis, statistical modeling, and research across various domains and industries.

The workshop provided a comprehensive experience, covering key concepts such as data manipulation, statistical analysis, and data visualization. Topics discussed included correlation, regression, and more. The hands-on approach and interactive sessions facilitated a solid foundation for attendees to apply R in their research and project work.

First-year M.Sc. Zoology students participated with full attendance, and they were acknowledged with an e-certificate for their involvement in the program.

Programme Objective: To familiarize students with various topics in the field of bioinformatics.

Programme Outcomes:

1. Hands-On Training: Students gained practical experience by participating in hands-on sessions covering topics like sequence alignment, biological databases, and gene prediction methods. This exposure enhances their skills and prepares them for future research endeavors.

2. Foundational Understanding: The workshop provided a foundational understanding of bioinformatics, bridging theoretical knowledge with practical applications. This knowledge is valuable for students' pursuing careers in life sciences and research.



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CHRIST
COLLEGE (AUTONOMOUS)
IRINJALAKUDA, KERALA
Reaccredited by NAAC with 'A++' grade

**DEPARTMENT OF STATISTICS,
CHRIST COLLEGE (AUTONOMOUS)
IRINJALAKUDA, KERALA**

CERTIFICATE OF PARTICIPATION

This is to certify that **Ms. Akhila Das**
 has participated in the Three Days Hands on Workshop on
"R Programming For Data Analysis"
 17th, 18th and 19th August 2023
 in association with IQAC, Christ College (Autonomous), Irinjalakuda.


 Dr. Sr. Mariyamma K D
 Head, Dept of Statistics (Aided)


 Dr. Davis Antony M
 Head, Dept of Statistics (Self-financing)


 Rev. Dr. Jolly Andrews
 Principal



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3. Life Science NET Coaching Programme (L.S.N.C.P.)

University Subject Expert Dr. Binu R. and K.F.R.I. Chief Scientist Dr. T. V. Sajeew launching the NET Coaching Programme during Zoology Research Fest organized by the Department of Zoology., on 09/08/2023 at Christ College (Autonomous) Irinjalakuda.

Programme Objective: To prepare students for the National Eligibility Test (NET) in Life Sciences.

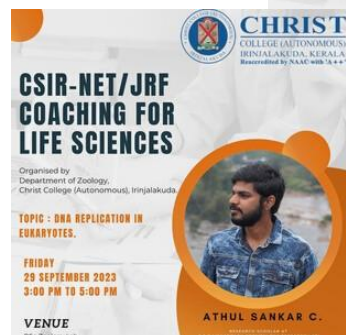
Programme Outcomes:

1. Enhanced Exam Preparation: The coaching program equips students with focused guidance and strategies specifically tailored for the National Eligibility Test (NET) in Life Sciences. This targeted preparation enhances their chances of success.

2. Access to Expertise: Interaction with University Subject Expert Dr. Binu R. and K.F.R.I. Chief Scientist Dr. T. V. Sajeew provides valuable insights, mentorship, and exposure to cutting-edge research. Students benefit from their expertise and gain a deeper understanding of life science concepts.



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4. FOREST ECOSYSTEM VISIT

On June 24, our journey to Silent Valley commenced at 11:00 AM, leading us to the precise location of Thatthengalam. The day unfolded with a morning class, followed by a post-lunch field visit, immersing participants in the rich biodiversity of the area. In the evening, an insightful class delved into the ecological significance of the Western Ghats, complemented by a documentary play shedding light on the uniqueness of Silent Valley.

The activities on June 25 began with an early morning field visit, focusing on the identification of various flora and fauna in this ecologically diverse region. Subsequently, the group explored the picturesque Kunthi River, adding an aquatic dimension to our experiential learning. As the afternoon approached, we concluded our immersive journey, packing up with a profound appreciation for the natural wonders discovered during our visit to Silent Valley.

Programme Objective: To immerse participants in the rich biodiversity of the area.

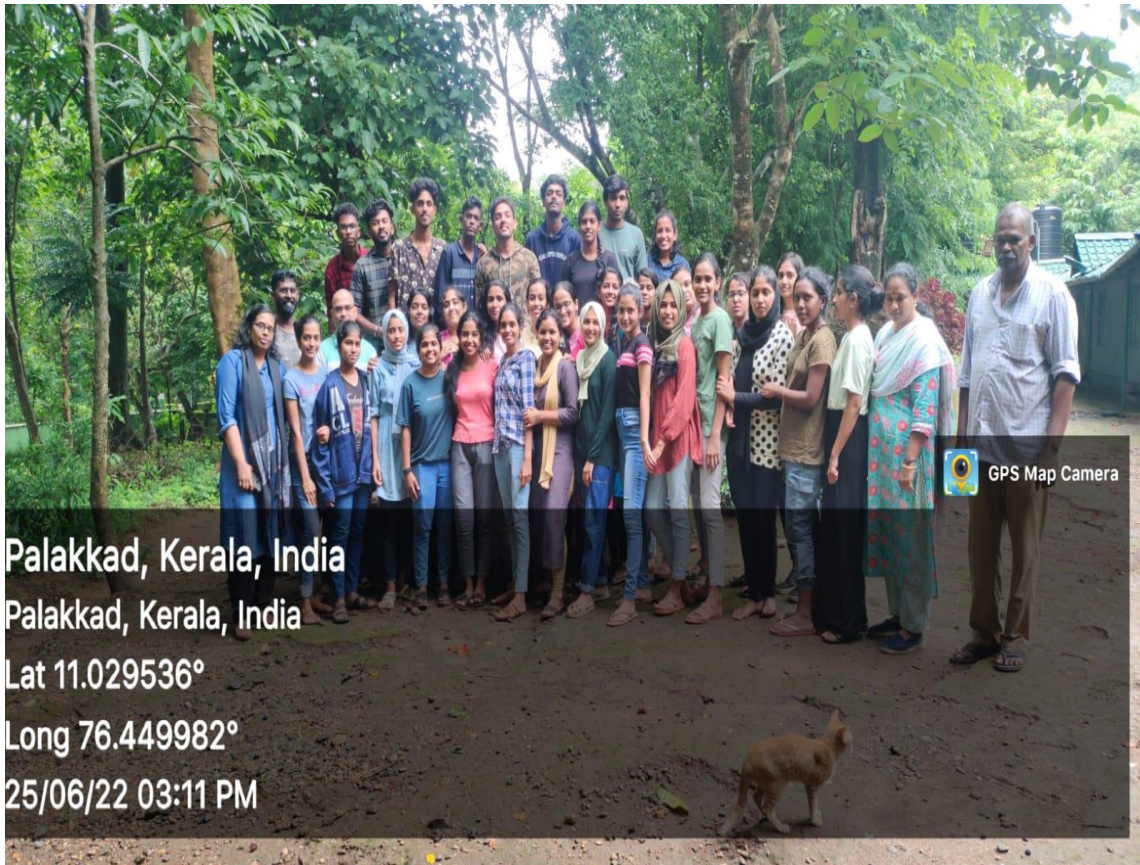
Programme Outcomes:

1. Biodiversity Immersion: The field visits and classes allowed students to immerse themselves in the rich biodiversity of Silent Valley. This firsthand experience enhances their understanding of ecosystems, species interactions, and conservation.

2. Ecological Awareness: Learning about the ecological significance of the Western Ghats and experiencing the unique environment firsthand fosters ecological awareness. Students gain insights into the delicate balance of nature and the importance of conservation efforts.



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5. COASTAL ECOSYSTEM VISIT

On August 22nd, the first-year MSc Zoology students visited Kothakulam Beach in Valappad, Thrissur, to explore and learn about the coastal ecosystem. Arrived the location by 4.15 Pm. Numerous species of pisces molluscs echinoderms etc. were seen and few collected.

The collected specimens were identified as the following:

Pisces: *Sardinella longiceps*, *Stolephorus commersonni*, Pony fish, *Belone cancella*, *Aurelia aurita*

Echinodermites: *Astropecten indicus*, *Portunus pelagicus*, *Portunus sanguinolentus*, *Penaeus indicus*, *Penaeus monodon*, Eupagurus.

Molluscs: *Uroteuthis sibogae*, *Bufo rana*, *Anadara inequivalvis*, *Meretrix meretrix*, *Agaronia nebulosa*, *Turritella attenuata*

Programme Objective: To familiarize zoology students with the diverse marine life and ecological dynamics of Kothakulam Beach.

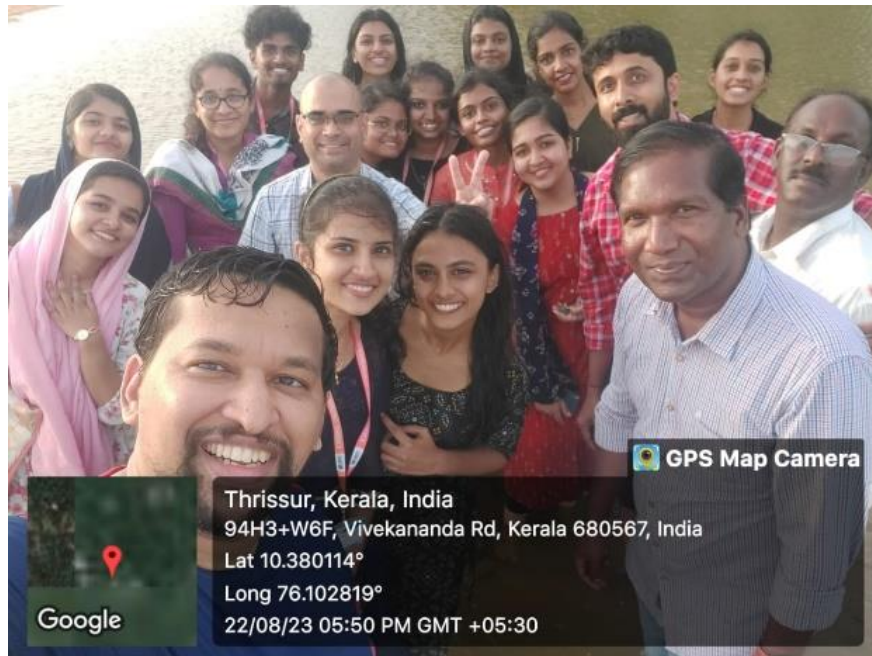
Programme Outcomes:

1. Species Identification Skills: Students had the opportunity to identify various species of fish (Pisces), echinoderms, and mollusks. This hands-on experience enhances their species recognition skills, which are crucial for future research and fieldwork.

2. Ecological Understanding: Exploring the coastal ecosystem allowed students to witness the interactions between different organisms and their environment. This firsthand exposure deepens their understanding of ecological processes, adaptation, and biodiversity conservation.



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6. MANGROVE AND INTERTIDAL ECOSYSTEM VISIT

On 12th and 20th of December an institutional visit was conducted to various mangrove ecosystem and the intertidal ecosystem in Kochi, Ernakulam. Those includes the mangrove ecosystem and the intertidal ecosystem.

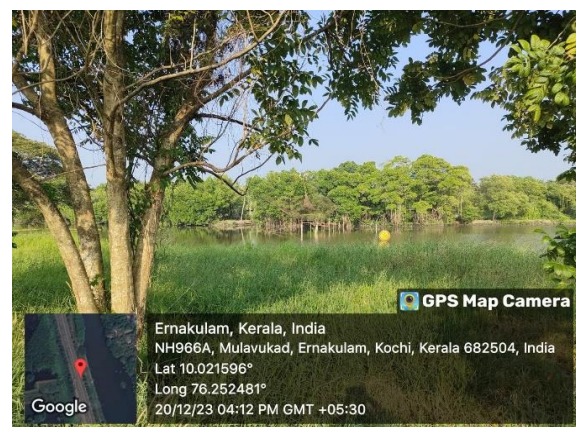
The mangrove ecosystem was seen spreaded in the Vembanad lake and provided a mesmerizing greenery. The special Chinese dipnet saw was also very interesting.

The inter tidal ecosystem were seen when we visited the FSI. The ships we saw was having species of Molluscs attached to the base of it. Also, another scene which caught our eyes were the water hyacinth (*Eichhornia crassipes*). Large bundles of the same were floating over the water.

Programme Objective: To provide students with firsthand exposure to these unique coastal habitats.

Programme Outcomes:

- 1. Ecological Understanding:** Students witnessed the mangrove ecosystem's greenery and the intertidal ecosystem's diverse species. This experience deepened their understanding of coastal ecology, species interactions, and adaptations.
- 2. Species Observation:** Identifying mollusks attached to ship bases and observing water hyacinths floating on the water allowed students to engage directly with the local biodiversity. Such observations enhance their observational skills and appreciation for natural ecosystems.





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7. INSTITUTIONAL VISIT, KOCHI

The M.Sc. Zoology first and second year students visited various institutions in Kochi, Ernakulam.

On 12th of December the journey was started by 9.00 am from college and arrived at Central Marine Fisheries Research Institute (CMFRI). A short description regarding the institute was given through a video. Later various divisions of CMFRI were shown including the Marine Biotechnology Division, Hatchery, Central lab etc. Also, the CMFRI Museum which is a national specimen depository was visited. Lastly the Marine Research Aquarium was shown.

The next destination was the Fisheries Survey of India (FSI). Various types of ships were shown like that of the saw troller. The process of navigation of ship was explained by the captain of the vessel.

On 20th of December, the second day of Institutional Visit, NIFPHAT and CIFNET were the destinations.

The National Institute of Fisheries Post Harvest Technology and Training (NIFPHAT) is an institute that deals with the post harvested techniques like preserving and processing of fishes. The freezing and canning plant were shown. Fresh and frozen yellow fin tuna were shown.

The Central Institute of Fisheries Nautical and Engineering Training (or CIFNET) is an institute in which the fishing techniques and marine engineering trainings are given. Various types of nets and gears were shown. Also models of various fishing boats of various localities as well as the marine engineering workshop were shown. The most interesting part of the visit was the seamanship navigation simulator.

As a whole, the two days industrial visit was an amazing experience.

On the way back, we saw the vast Mangrove ecosystem of Kochi and one of the specialties of Kochi- the Chinese fishing nets. Also, the inter tidal ecosystem was seen in the banks of Vembanad lake.

Programme Objective: To provide students with practical exposure to diverse aspects of marine science and fisheries.



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Programme Outcomes:

- 1. Hands-On Learning:** Students directly observed marine research facilities, ships, and fishing gear. This firsthand experience enhances their understanding of marine ecosystems, fishing practices, and technological applications.
- 2. Career Exploration:** Exposure to different institutes broadened students' awareness of potential career paths in marine science, fisheries management, and post-harvest technology. It allowed them to connect theoretical knowledge with real-world applications.



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PRINCIPAL

Fr. Dr. Jolly Andrews
Associate Professor -
In-Charge of Principal
Christ College (Autonomous)
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