

ACADEMIC COURSE

1. M.Sc., Marine Biology (Two Years Regular course)

A research – oriented unique course to pursue an exciting and adventurous wide range of marine career focusing from basic to applied sciences in marine and coastal ecosystem.

If you are a person:

- Who love and care for Mother Nature and marine environment?
- Bored of class room type of teaching and learning practice?
- Love to travel and dive in ocean?
- Who chase your dream job/ career in marine science with inquisitive and investigative mind to learn something new?

If you answer "YES" for the above questions, your right choice at this right moment is for Post-graduate in Marine Biology programme offered in our department.

Minimum Eligibility

B.Sc., in any branch of Life Science (Biology / Biochemistry / Botany / Zoology / Microbiology / Marine Biology / Biotechnology or equivalent of a recognized Indian or Foreign University) Candidates should have secured a minimum of 55% marks in the subject (Part-III) and 50% marks for SC & ST categories.

Students field visit and hands-on learning experience



MADURAI KAMARAJ UNIVERSITY
(University with Potential for Excellence)

Re-accredited by NAAC with 'A' Grade in the 3rd Cycle



Department of Marine and Coastal Studies
Pudumadam Marine Field Research Facility
Ramnad District, Tamil Nadu, India



Department of Marine and Coastal Studies
Main Campus
School of Energy, Environment and Natural Resources
Madurai Kamaraj University,
Madurai – 625 021

FOR FURTHER DETAILS CONTACT

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OUR VISION

Provide world-class education and research facilities in the field of marine sciences with particular reference to coral reef environment and management for everyone's future prosperity.

THE MISSION

- ❖ To contribute in the conservation, protection and management of coral reef resources of the Gulf of Mannar and Palk Bay in the Southeast coast of India through teaching, research and environmental education activities.
- ❖ To assess the status of reef resources users, their social, cultural and economic aspects for the uplift of poor fishing communities along the Gulf of Mannar and Palk bay coasts.
- ❖ To develop human resource in the area of marine and coastal studies that would be ultimately of benefit to coastal communities.
- ❖ To conduct Interdisciplinary Teaching and Research activities to facilitate conservation and sustainable utilization of reef resources.
- ❖ To conduct job oriented training programmes and courses such as SCUBA Diving, Ecotourism, and Marine Ornamental Fish Maintenance for the benefit of all stakeholders.
- ❖ To interact with and involve local people viz., fishermen, students, and professionals, as stakeholders to participate in the process of conservation and protection of the marine environment and its resources

RESEARCH & DEVELOPMENT

1. From 1990 onwards, the centre /the department has actively engaged in marine research activities in the Gulf of Mannar, one of the first formed Marine National Park in South Asia for its unique Marine Biosphere Reserve.
2. The following are the major research activities carried out for the conservation of coral reefs of Gulf of Mannar region:
 - a. Monitoring the status of Coral reefs and associated organisms.
 - b. Monitoring the Socioeconomic status of reef resource users.
 - c. Monitoring marine and coastal pollution.
3. Marine Ecotoxicology Research facility is of national importance since the major objective of this facility is to develop marine water quality criteria for critical coral reef ecosystems of Gulf of Mannar, Southeast coast of India.
4. The Department has been recognized by its work and has been supported by international organizations such as IOC/UNESCO, UNDP, WHO, IFS, GCRMN and by national organizations such as the MoES (DOD), MoEF, ISRO, ICMR, CSIR, Planning Commission and the UGC.
5. The National Coordinating Agency for GCRMN South Asia has recognized the Department of Marine & Coastal Studies for collecting data at periodic intervals on the status of corals in the southeast coast of India.
6. The GEF/UNDP has also identified and included this Department as a member institution to carry out research activities in the Gulf of Mannar Marine Biosphere Reserve to protect and conserve the coral reefs in collaboration with Gulf of Mannar Biosphere Reserve Trust.

STUDYING THE MARINE SCIENCES

The ocean covers more than 70% of the Earth's surface. India has 7,516 km coastline, 1197 islands and an Exclusive Economic Zone (EEZ) spanning 2.02 million sq km. As the majority of the Indian population lives in the coastal zone, an understanding of the processes and hazards associated with the coastal and oceanic environment is essential.

DMCS offers a unique opportunity to study the underwater marine environment and understand the response of genes and proteins of marine organisms with reference to marine pollution. **Unlike other fields of science which involve full time laboratory work, studying marine sciences throws open real challenges to the young minds to prove their capabilities to work with nature.**

ABOUT THE DEPARTMENT

Madurai Kamaraj University instituted the Centre for Marine and Coastal Studies (CMCS) in the School of Energy, Environment and Natural Resources at 1998 for the establishment of a Marine Field Research facility. In 2003, "Marine Ecotoxicology Laboratory Facility" was established at Pudumadam through the Ministry of Earth Sciences (MoES) grants. This facility is situated at Pudhumadam, a small fishing village on the shores of the Gulf of Mannar, Southeast coast of India. M.Sc., Marine Biology programme (Previously M.Sc. Sub-Aqua Marine Ecology and Toxicogenomics) was started at 2004. Furthermore, the Centre has been upgraded to Department of Marine and Coastal Studies during October 2009.

Marine Field Research Facility at Pudhumadam in Ramanathapuram District is an ideal location for conducting marine based research and academic activities. The campus is located at close proximity to Mulli and Musal Islands of Gulf of Mannar region. Ecologically sensitive marine habitats like Coral reefs, Mangroves, Seaweeds and Seagrass ecosystems are situated within a short distance from our campus. The Gulf of Mannar region and the outer coastal areas are extremely rich in marine biodiversity and offer extraordinary opportunities for marine biological studies.

SIGNIFICANCE OF THE DEPARTMENT

- ❖ The department has the following facilities at Pudumadam in Ramnad District, Tamilnadu, India.
- ❖ Total extent of the Department - 9.0 acres of coastal land.
- ❖ Near shore laboratory facilities with 3800 sq.ft. area for wet lab including coral reef ecology, analytical research lab etc.
- ❖ Another building facility with more than 9000 sq.ft. area with classrooms, marine genomics, microbiology, SCUBA, research laboratories including library and seminar hall facilities.
- ❖ Established a Marine Museum with the financial support of DOD, New Delhi.
- ❖ Established a Marine Ecotoxicology Laboratory facility with the financial support of MoES, New Delhi.
- ❖ Well-equipped marine underwater SCUBA Diving equipments and infrastructure facilities for conducting marine underwater ecology and monitoring studies.
- ❖ Well equipped with marine biotechnology: marine genomics, marine microbiology, toxicogenomics, marine ecotoxicology and pollution, marine natural products chemistry etc.
- ❖ Seawater storage and intake facility.
- ❖ In-situ underwater monitoring / analysis facility

Equipment Facility-Underwater Ecology Research:

1. FRP Boat with OBM
2. Digital Still & Video Cameras with Underwater Housing
3. Underwater Remotely Operated Vehicle (UWROV)
4. SCUBA Air Compressors
5. SCUBA Diving tanks and gears
6. Water Quality analyzer

Instrument / Equipment Facility-Biotechnology & Environmental Research:

PCR, UV Transilluminator, Luminometer, Gel Doc, Fluorometer, UV-Visible Spectrophotometers, Hitachi High Speed cooling centrifuge, Semi-micro analytical balances, Microbiological Chamber, BOD Incubator, Ultrapure Water Purification System, Fluorescence and Trinocular Microscopes with Digital Cameras and Image Analysis software, ICE Maker, Ultra Low Temperature Freezer (-82°C) & Deep Freezer (-40°C), Rotary Evaporator, Microtome, Automatic Tissue Processing Unit, Digital pH Meters, Automatic Weather Station, LiCor 1500 GPS PAR Underwater sensors, Hanna Multiparameter Meter with GPS.

Placement and Job Opportunities

- ❖ Colleges and Universities
- ❖ Aquaculture Industries
- ❖ Seafood Industries
- ❖ Export Inspection Agencies
- ❖ Indian and Foreign Research Labs
- ❖ Environmental Impact Assessment
- ❖ Campus interviews