



AMITY UNIVERSITY

RAJASTHAN

AMITY CENTRE FOR OCEAN-ATMOSPHERIC SCIENCE & TECHNOLOGY

Amity Centre For Ocean-Atmospheric Science & Technology (ACOAST) was established in 2015 with a view to developing manpower in Weather and Climate Sciences, Environmental monitoring and analysis, The Centre is equipped with high performance computational resources for the running Numerical Weather Prediction models for weather and climate systems, understand the physics and dynamics of weather extremes like severe thunderstorms, tropical cyclones, flood, dust storms, drought, Monsoon System and its variability, Oceanography, Disaster Management & Mitigation etc

The University provide minor track degree in **Climate Science** for under graduate students, that **include on** various courses on **climate science and/or environmental sustainability**. The objective of the programme to promote interdisciplinary research in cutting-edge science & technology and public services. It encompasses numerical modeling of atmosphere and ocean, monsoon studies, high impact severe weather forecasting, air pollution, land- air-sea interaction, and climate change to understand its physical and social consequences. The programme will also develop a strong research and capacity building in the area of atmospheric and climate science.

Climate Simulation Lab



Climate Simulation Lab (CSL) placed with six high-end stand-alone workstations extensively used by the Student and Research Scholars for weather and climate and Environmental modelling research HPC Server comprising of 3 nodes with total cores, providing~ 6 Tera Flops clock speed and 184 TB storage. CISCO network switch of 100 GB/s is connected to HPC for fast data transfer to remote user supported with 10 KV USB for uninterrupted power supply. The HPC server is fortified with parallel processing capabilities and meteorological data handling software. This is primarily utilized to simulate state-of-the-art numerical models of weather and climate for short and medium to seasonal scale prediction.

The highly qualified faculty not only teach in graduate and postgraduate programmes but also undertakes the cutting-edge research on climate science. The faculty of the Centre supervises PhD and MS student and the research outcome had been published in peer reviewed journals. The Environmental Monitoring facility established at ACOAST for continuous monitoring of black carbon concentration and Aerosol concentration. The centre also engaged in outreach activity on community science programme air quality for school children in Jaipur



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Environmental Monitoring Facility: has been established at Amity COAST with the collaboration of India Meteorological Department (IMD), New Delhi.



The Sky Radiometer to measure scattered solar radiation at multiple wavelengths for the estimation of aerosol properties Aerosol Optical Depth (AOD).



Aethalometer: to measure the concentration of optically absorbing (black) suspended particulates in a gas colloid stream; commonly visualized as smoke or haze, often seen in ambient air under polluted conditions



Automatic Weather Station: AWS is an integrated system of components that measures weather parameter such as wind speed and direction, humidity, temperature, atmospheric pressure, & precipitation.



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Dedicated FTE staff of the Research Centre

Prof. (Dr) P.V.S. Raju is currently working as a Professor and Director at Centre for Ocean Atmospheric Science and Technology, Amity University Rajasthan. He has over 25 years of research and teaching experience in the field of Atmospheric Science. He holds a PhD from IIT Delhi, and M.Tech., M.Sc., from Andhra University. He has awarded CSIR-SRF; Junior Associate, ICTP, Italy. His research interest includes Regional Weather & Climate Modeling and Diagnostic Studies; Monsoon Dynamics and its Variability. He has published more than 75 research papers in peer-reviewed journals. (<https://scholar.google.co.in/citations?user=L9WAoaMAAAAJ&hl=en>).

Dr. Shatrughan Singh, an Assistant Professor at the ACOAST, has completed his Ph.D. in Earth and Atmospheric Sciences from Mississippi State University, USA. His Ph.D. research investigated dissolved organic matter (DOM) characteristics in diverse aquatic ecosystems while exploring the role of hydrological and climatological changes. His current research interest focuses on investigating ecohydrological changes, both in terms of quality and quantity, in freshwater ecosystems inevitably pertinent to humans, especially considering climate change scenarios. His future research interests target to offer meaningful solutions in addressing water quality-related issues in freshwater ecosystems while utilizing modern tools and techniques and advanced data analytics. More details on his research activities can be found on his Google profile here (<https://scholar.google.co.in/citations?user=AXoHQAIAAAAJ&hl=en&authuser=2>).

Dr. Era Upadhyay is currently working as Associate Professor at Amity University Rajasthan, Jaipur. She acquired Doctorate in Botany with specialization in Environmental Sciences from Aligarh Muslim University, Aligarh. Her research interests include analysis of biochemical & morphological features of plants, soil characteristics, and impact of soil properties on plants; and currently she is engaged with Monitoring and Modeling of Air Quality, Data Analysis, Risk Assessment, Occupational Safety and Health research. During the last four years, she has contributed mainly on global issues related to health. She has published 05 book chapters and more than 51 research papers in peer reviewed and refereed journals including Nature, Nature Medicine, Nature Human Behavior, Lancet etc. Dr Era is also working on some novel concepts related to air pollution and herbal medicine and published 04 patents. (<https://scholar.google.com/citations?user=Usm1PLIAAAAJ&hl=en>)



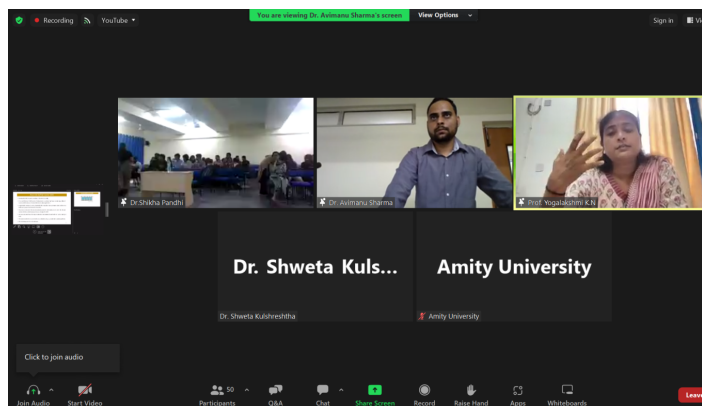
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AMITY CENTRE FOR WATER STUDIES & RESEARCH (ACWSR)

The **Amity Centre for Water Studies and Research (ACWSR)** is a specialized research hub focused on addressing the multi-dimensional challenges of water resource management, sustainability, and policy. The Centre has established collaboration under an MoU with University of West of England (U.W.E.), Bristol, United Kingdom. The ACWSR aims to provide a multidisciplinary platform for **teaching, research, and consultancy** in water-related issues. Its primary goal is to bridge the gap between scientific research and practical applications to ensure water security. The centre uses an integrated approach combining science, technology, and engineering to tackle issues such as:

- **Water Scarcity:** Developing techniques for the sustainable use of water in countries with a lack of water.
- **Water Quality and Toxicity:** Conducting research on novel pollutants, including the influence that nanomaterials and other manufactured toxic compounds have on the safety of water.
- **Climate change Studies**, which involves the investigation of the complex interaction between global warming, shifting weather patterns, and the impact these factors have on regional water cycles.
- Developing novel approaches to water recycling and treatment in order to foster a circular water economy is the focus of wastewater management strategies.

Centre for Water Studies and Research organizing awareness programme on wastewater biorefinery and their role in the treatment of wastewater and in the generation of various products. Prof. Yogalakshmi K.N, Dean School of Environment and Earth Sciences, Central University of Punjab, Bathinda delivered a talk. The aim of the program is to understand the technical processes involved in the conversion of wastewater into useful products. Also know about technological advancement in the field of wastewater biorefinery their role in achieving sustainable goals and sustainable development.



Interactive session on awareness of wastewater biorefinery and their role in the treatment of wastewater

Dedicated FTE staff of the Research Centre

Dr. Shweta Kulshreshtha is an Associate Professor in Amity Institute of Biotechnology (AIB) and Coordinator **Amity Centre for Water Studies and Research (ACWSR)** at Amity University Rajasthan (AUR), Jaipur. She did her B.Sc. in Environmental Science, M.Sc. in Applied Microbiology, and a Ph.D. in Microbiology & Environmental Biotechnology (2011). She has also qualified for CSIR-NET and GATE. Her work is primarily focused on the intersection of microbiology and environmental sustainability. She Developed methods to convert waste into valuable products or neutralise



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environmental pollutants. Her Researching hydrocarbon remediation and the impact of heavy metals; Exploring the use of cyanobacteria for oil extraction (biofuels) and the development of herbal antimicrobials. She has a significant publication record (over 60 papers) and holds several patents (both published and granted) within the Indian Patent Office (IPO).

Dr. Manishita Das Mukherji is presently serving as Associate Professor at Amity University Rajasthan, Jaipur, India. She holds a PhD degree in Environmental Sciences from Sardar Patel University, Gujarat. She has an experience of over 20 years in teaching and research. Her areas of research interest include Wastewater heavy metal remediation, ecological studies of natural wetlands and emerging water pollutants. She is a Senior Member of Asia-Pacific Chemical, Biological & Environmental Engineering Society (APCBEEES), Hong Kong. Apart from this, she is also actively associated with prestigious professional bodies like ISCA, IACSIT, Singapore. She has to her credit 54 publications in peer-reviewed journals, books, and conference proceedings. She is the editorial board member of journals of national and international repute. She has worked and is working as a reviewer of journals with reputed publication houses such as Willey, Taylor & Francis, Elsevier Springer. https://scholar.google.com/citations?user=2-tRR_oAAAAJ&hl=e