

Establishment of Center of Excellence

Amity Centre for Water Studies and Research (ACWSR)

[Established on 22/08/2019]

1. Introduction

Water is one of the most critical natural resources for human survival, ecological balance, agricultural productivity, industrial growth, and sustainable development. Increasing pressure on freshwater resources, groundwater depletion, pollution of water bodies, climate variability, and unequal access to safe drinking water have created urgent challenges for communities and policymakers.

Recognizing these concerns, the **Amity Centre for Water Studies and Research (ACWSR)** was established on 22/08/2019 as a multidisciplinary Centre of Excellence dedicated to advancing research, innovation, policy support, capacity building, and outreach in the field of water resources, water quality, water conservation, and sustainable water management.

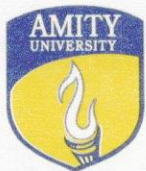
2. Vision

To be a leading Centre of Excellence in water studies and research, contributing to sustainable water security, innovation, conservation.

3. Objective

The objective of the Amity Centre for Water Studies and Research is :

- (a) To establish a comprehensive research and innovation ecosystem focused on the sustainable assessment, conservation, management and treatment of water resources.
- (b) To offer solutions to major water-related problems as a consultant organization.
- (c) To produce highly trained and skilled manpower to deal with water-related issues in a multi-disciplinary approach.
- (d) To understand the local, regional, national, and global problems related to water availability and sustainable development.
- (e) To undertake research with a converging approach of science, technology, and engineering in the following areas:
 - (i) Water toxicity caused by industries and modern technology oriented contaminant sources, including nanomaterials.
 - (ii) Sustainable management of water resources, wastewater and ecosystems, and acknowledging the importance of an enabling environment.
 - (iii) To develop artificial intelligence and internet of things based technologies for wastewater treatment, its detection and forecasting.



(f) To undertake national and international collaborative research activities.

4. Sustainable Development Goals Linked with ACWSR Activities

Amity Centre for Water Studies and Research shall align its activities, research initiatives, and outreach programs with relevant United Nations Sustainable Development Goals, especially in the areas of water, sustainability, innovation, and partnerships.

SDG 6: Clean Water and Sanitation – Advancing safe water access, water quality improvement, wastewater treatment, and conservation.

SDG 3: Good Health and Well-Being – Reducing waterborne health risks through improved water safety and hygiene.

SDG 9: Industry, Innovation and Infrastructure – Promoting innovative water technologies, monitoring systems, and sustainable infrastructure.

SDG 11: Sustainable Cities and Communities – Supporting urban water planning, drainage, reuse, and resilience.

SDG 12: Responsible Consumption and Production – Encouraging efficient water use, recycling, and responsible resource management.

SDG 13: Climate Action – Addressing climate-related water scarcity, floods, droughts, and adaptation strategies.

SDG 15: Life on Land – Protecting watersheds, wetlands, and terrestrial ecosystems linked to water security.

SDG 17: Partnerships for the Goals – Building collaborative networks for research, policy, and implementation.

5. Functions of ACWSR

ACWSR will perform multidisciplinary functions encompassing research, technical support, training, and outreach activities.

5.1. Research and Development

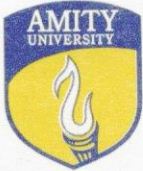
- Conduct advanced research in hydrology, water quality, water resource management, and conservation.
- Develop and evaluate low-cost and sustainable water treatment and purification methods.
- Study groundwater recharge, aquifer health, pollution pathways, and watershed dynamics.
- Investigate the impact of climate change, land use, and urbanization on water systems.

5.2. Analytical and Technical Services

- Water sampling, testing, and analysis for physical, chemical, and biological parameters.
- Monitoring of groundwater, surface water, wastewater, and drinking water quality.

5.3. Policy and Public Health Studies

- Generate evidence for water governance, conservation policy, and environmental management.



- Study links between water quality, sanitation, and public health outcomes.
- Provide research-based inputs for local, regional, and national water planning.

5.4. Capacity Building and Training

- Organize seminars, workshops, guest lectures, certificate courses, and training programs.
- Provide hands-on training in water sampling, testing, treatment, and data interpretation.
- Support student projects, dissertations, internships, and doctoral research.

5.5. Collaborative and Translational Activities

- Establish partnerships with academic institutions, industries, government departments, and NGOs.
- Facilitate translational research and technology transfer in water purification and conservation.
- Support interdisciplinary and externally funded projects.

6. Operational Framework of the Centre

The ACWSR shall function through an integrated and collaborative framework involving faculty members, research scholars, technical staff, and external collaborators.

The Centre may operate through thematic research groups focused on water quality, hydrology, groundwater systems, wastewater treatment, watershed management, climate resilience, and water policy.

The Centre Coordinator shall be responsible for strategic planning, research coordination, collaborative initiatives, and administrative functioning of the Centre.

All research and field activities shall be conducted in accordance with institutional safety, ethical, and environmental principles.

7. Outreach Activities

The Centre will actively engage in outreach and extension programs to promote awareness of water conservation, sanitation, hygiene, and sustainable water use.

Outreach activities may include:

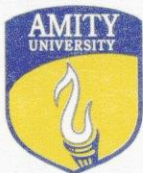
- Community awareness campaigns on safe water, sanitation, and conservation.
- Training and sensitization programs for students, teachers, farmers, and local residents.
- Water testing and awareness drives in schools, villages, and urban communities.
- Public seminars and campaigns on rainwater harvesting, wastewater reuse, and groundwater recharge.

The Centre will also contribute to public communication, and scientific dissemination through publications, conferences, workshops, and digital outreach.

8. Infrastructure and Facilities

The Centre shall utilize the existing laboratory, analytical, and field-based infrastructure of the institution to support research and training in water studies and related disciplines.

8.1. Laboratory Facilities



- Water quality analysis laboratory.
- Environmental monitoring and sampling facilities.
- Soil and groundwater assessment facilities.
- Computational and data analysis resources.

8.2. Equipments and Chemicals

- Water testing kits and analytical instruments
- Spectrophotometer and pH, colour and turbidity meters
- Filtration or treatment setup
- Autoclave, Hot air oven, Incubator, Laminar air flow, for microbiological / quality analysis of water
- Muffle furnace for adsorbent preparation
- MPN media, Nutrient Agar, Potato dextrose agar, standards of pH and turbidity, chemicals required for adsorbent preparation.
- Equipments and chemicals required for bioremediation/ Biosorption/ nano particles preparation and use in water treatment

8.3. Supporting Facilities

- Field survey and community outreach support.
- Interdisciplinary research support from related departments.

ACWSR shall also make efforts to further strengthen its facilities in response to emerging research and societal needs.

9. Outcomes and Expected Impact

The establishment of ACWSR is expected to contribute significantly to research, policy, education, and community engagement in the area of water sustainability.

The anticipated outcomes include:

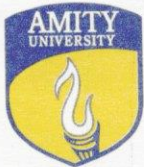
- Improved understanding of water quality, availability, and sustainability challenges.
- Development of innovative and cost-effective solutions for water treatment and conservation.
- Strengthening of interdisciplinary and collaborative research in water studies.
- Generation of quality publications, project proposals, patents, and policy briefs.
- Capacity building of students, researchers, and stakeholders in water-related disciplines.
- Contribution to local, regional, and national water security and sustainable development goals.

ACWSR will emerge as a hub for water studies, environmental solutions, and sustainable resource management.

10. Five-Year Activity Plan of ACWSR

Year 1: 2026-2027 – Consolidation and Strategic Strengthening

- Review and document achievements
- Identify emerging priorities and research gaps in the water sector.
- Develop a detailed research and institutional development roadmap.
- initiate collaborations.



Expected Outcome: A strengthened institutional foundation and a clearly defined research and development roadmap.

Year 2: 2027-2028 – Expansion of Research and Capacity Building

- Initiate priority research projects on water security, groundwater, water quality, and climate resilience.
- Expand training programmes and knowledge dissemination activities.
- Develop research publications, technical reports, and policy briefs.
- Strengthen laboratory, technical, and digital capabilities, as applicable.
- Establish additional institutional and academic partnerships.

Expected Outcome: Expanded research activities, increased capacity-building outreach, and enhanced technical capabilities.

Year 3: 2028-2029 – Innovation and Field-Level Engagement

- Promote innovative solutions for water conservation and management.
- Undertake field-based studies
- Strengthen stakeholder participation and community-oriented programmes.
- Develop tools, methodologies, and knowledge products for water management.

Expected Outcome: Greater application of research findings and strengthened engagement with water sector stakeholders.

Year 4: 2029-2030 – Scaling Up and Policy Engagement

- Expand successful research initiatives and pilot interventions.
- Develop collaborative research programmes.
- Organize national and regional knowledge-sharing events.
- Document best practices and lessons learned.

Expected Outcome: Increased institutional outreach, stronger policy engagement, and wider dissemination of research-based solutions.

Year 5: 2030-2031 – Evaluation, Sustainability, and Future Planning

- Conduct a comprehensive evaluation of the five-year strategic plan.
- Assess achievements against defined targets and performance indicators.
- Document research outcomes, partnerships, and institutional developments.
- Identify priorities for the next strategic planning period.
- Prepare the subsequent five-year strategic plan based on evaluation findings.

Submitted by

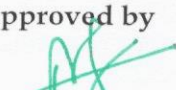

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