6.5.6 University actively promote conscious water usage on campus

Alexandria university actively promotes responsible water usage by integrating sustainable water management systems, expanding water conservation programs, and improving wastewater treatment and recycling across campus. Through awareness campaigns, technical training, and collaborative initiatives with local water authorities, the university enhances efficient use of water resources, reduces water pollution and environmental impact, and strengthens long-term sustainability. This integrated approach combines scientific analysis, technological innovation, and community engagement to improve system performance, advance modern water treatment technologies, and support national objectives for efficient water management, environmental protection, and sustainable development.

Alexandria university's water conservation initiatives are documented through sustainability assessments and institutional reports. The campus water management strategy integrates infrastructure upgrades, faculty-led recycling programs, and international research initiatives to improve water quality, reduce water consumption, and promote sustainable development.

1. Water-saving appliances and infrastructure updates

According to the university's reported internal audits, water conservation modifications have replaced conventional fixtures across multiple campuses, achieving an overall 56.5% adoption rate of water-efficient appliances.

- **Faucets and taps:** approximately 68% of campus bathroom faucets have been converted to water-efficient or sensor-controlled automatic units, reducing unnecessary water consumption.
- **Showers and toilets:** around 67% of campus showers and 43% of toilets and bidets use low-flow or high-efficiency components, supporting the objective of reducing water use.
- **Network monitoring:** regular maintenance and monitoring of internal pipeline networks help identify leakage, prevent water loss, and improve infrastructure performance.

	
Supplying water taps with water conservation units(Alexandria University, Egypt)	Adopting a mechanism to maintain water pipes toprevent waste resulting from leaks (Alexandria University, Egypt)

2. Faculty-specific recycling and reuse programs

University faculties implement specialized water recycling and recovery systems to reduce demand for fresh water resources and improve sustainable water management.

- **Faculty of engineering:** specialized air-conditioning water collection units and decentralized wastewater treatment equipment capture and recover condensed water for appropriate reuse, supporting water conservation and resource efficiency.
- **Faculty of agriculture:** the experimental research station in the abis region operates a closed-loop recycling system in which drainage water from fish aquaculture ponds is reused for irrigation of fruits, vegetables, and field crops. This nutrient-rich effluent reduces dependence on municipal water supply and conventional fertilizers.
- **Campus-wide irrigation:** treated wastewater is used to irrigate campus gardens and green spaces, reducing fresh water consumption while supporting sustainable landscape management and environmental protection.



Air conditioning water collection and reuse unit - Faculty of Engineering

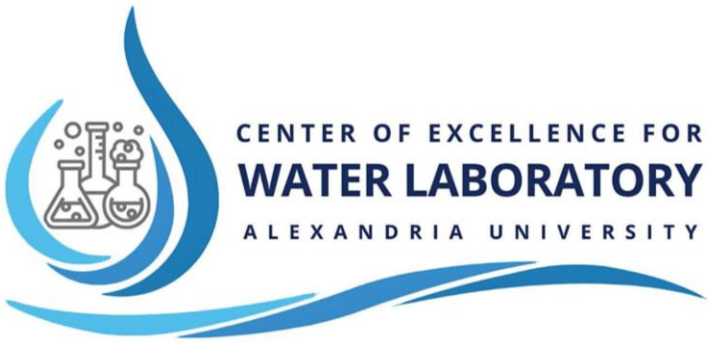


Wastewater treatment unit at the Faculty of Engineering

3. Center of excellence for water (AWR-COE)

Established at Alexandria university through a reported $30 million USAID grant, the Alexandria water resilience center of excellence serves as a research hub in collaboration with the American university in Cairo (AUC) and a consortium of American universities, including Washington state university and uc Santa Cruz.

- **Laboratory accreditation:** the center's primary laboratory reportedly achieved ISO/IEC 17025:2017 accreditation, supporting reliable measurement and evaluation of water quality, desalination performance, and wastewater treatment efficiency.
- **IOT agricultural project:** in collaboration with the shanghai water saving irrigation corporation, the university farm serves as a pilot site for an internet of things (IOT) automated irrigation system. Smart sensors measure crop water requirements and optimize water distribution, supporting precision agriculture and addressing water scarcity.



Alexandria University's Centre of Excellence for Water Laboratory Obtains ISO/IEC 17025:2017 International Accreditation

This accreditation represents a significant achievement, as it confirms the laboratory's ability to conduct chemical and physical water testing in accordance with international standards. This enhances the reliability of results, supports research projects, and contributes to addressing the challenges of water scarcity, pollution, climate change, and sustainable development at both the local and international levels.





Water Quality Parameters Testing Program by Alexandria Water Resilience – Center of Excellence:

Intensive 5-day program, with the participation of 14 students from the Civil and Environmental Engineering program at the Faculty of Engineering, Alexandria University. This program equipped the participants with valuable knowledge and skills to master the tools and techniques used in the water analysis laboratory.





The AG-WaMED Final Event "Governing non conventional water resources (NCW) in the Mediterranean: the experience of the AG-WaMED PRIMA project"

Lots of interesting presentations and discussions, with roundtables and interactive moments with the participation of Prima Program PRIMA Nexus-Ness and SALAM - MED. The creation of a IAHS - International Association of Hydrological Sciences working group on Non-Conventional Water (NCW) use for Integrated Water Resources Management.





Alexandria University's Faculty of Agriculture Organizes a Workshop Titled "Soil and Water: The Source of Life" in Celebration of World Soil Day 2025. the workshop's activities coincided with the celebration of World Soil Day, and included a series of scientific lectures addressing key topics in soil and water sciences, such as the use of artificial intelligence in agricultural research and the importance of smart agriculture in enhancing soil safety and urban health. These discussions reflect the global trend toward sustaining natural resources and innovating scientific solutions to environmental challenges.





Centre of Excellence for Water at Alexandria University Organizes Workshop on Relationship between Water, Energy and Food in Cooperation with the Arab Water Council:
The workshop aimed to deepen the comprehensive understanding of the interrelationship between these three resources (water, energy and food), highlight the challenges they face, and propose sustainable solutions, and the latest developments in this field, exchanging creative ideas, and enhancing cooperation between industry and academic institutions.





Alexandria University Participates in Cairo Water Week 2025 in Collaboration with the European Union Delegation to Egypt

As part of the ongoing collaboration between Alexandria University and the European Union Delegation to Egypt to promote innovation in water resources management, the university took part in the final stage of the “AI and Innovation Hackathon for Waterpreneurs”, organized by the EU Delegation and held on 15 October 2025 in Cairo within the framework of Cairo Water Week 2025.

The event featured the presentation of finalist projects before a distinguished jury representing the public, private, academic, and technological sectors, where young Egyptian innovators showcased AI-driven solutions addressing major water challenges such as smart irrigation, water quality monitoring, and digital tools for sustainable water management.





the Water Entrepreneurship Training Program in Cooperation with the European Union titled "Youth in Water: Shaping the Future" (EU for Water ln Egypt Aqua Dialogues) May 2025: young participants focused on water challenges and discussed various topics, including:

🔷Global trends in the water sector

🔷Climate adaptation and resilient water solutions
🔷Entrepreneurial mindset and innovation
🔷Circular water economy & non-conventional water resources
🔷The role of AI, tech, and digital tools in water management




Within the framework of the Center of Excellence for Water at Alexandria University's interest in Research and Sustainability, and the visit of Prof. Brent Haddad, Professor of Environmental Studies at the University of California- Santa Cruz and Chair of the Research and Policy Committee, the center organized a seminar entitled: "Towards Public Private Partnerships (PPP) in Alexandria within the Research Roadmap."




Under the Strategic Partnership between the Arab Republic of Egypt and the European Union. Ministry of Planning, Economic Development and International Cooperation Witnesses the Launch of the "EU 4 Water Preneurs" Training Camp for Entrepreneurs in the Water Sector 🇪🇬🇪🇺

The event was held at Alexandria University within the framework of the strategic partnership between the Arab Republic of Egypt and the European Union, and in partnership with the **PrimaProgram**. The initiative aims to stimulate the young energies of Egyptian innovators, researchers, and students, and encourage them to develop scientific and realistic solutions applicable on the ground to address the increasing and interconnected challenges facing Egypt in the fields of water, energy, and food.



Student organizations such as the ACS Alexandria University Student Chapter, Society of Petroleum Engineers (SPE), Alexandria Engineering Students Union, and Alexandria Scientific Pharmaceutical Students' Association (ASPSA) played a leading role in delivering these initiatives. Their activities promoted green chemistry, circular economy principles, Climate Change action, sustainable Materials, Water Innovation, biodiversity conservation, scientific communication, entrepreneurship, and environmental education through hands-on workshops, public awareness campaigns, interactive exhibitions, field training, and international collaborations, strengthening sustainable Development, environmental awareness, and community engagement across the University.