

Template for Evidence(s) UI GreenMetric Questionnaire

University : Alexandria University
Country : Egypt
Web Address : <https://alexu.edu.eg/>

[4] Water (WR)

[4.6] Planning, implementation, monitoring and/or evaluation of all programs related to Water Management through the utilization of Information and Communication Technology (ICT)

Stage	Activities/Programs	ICT Utilization	Evidence	Timeline	Responsible Team/Department
Planning	Smart Water Monitoring Systems in the campus	Water Conservation Digital Signage, ICT-based sensors in collection tanks, IoT Sensors for Water Usage, Leak Detection sensors, and Soil Moisture	Strategic plan documents	Jan 2024 - April 2024	GreenMetric Team of Alexandria University
Implementation	Install water-saving fixtures, promote awareness	Smart meters, water-saving app	Installation logs, awareness reports	Ongoing	Facility Management, ICT Department, + Students of the computer science, AI, Programming
Monitoring	water consumption in real-time	Real-time monitoring software	Water usage reports, reducing repair costs	Jan 2025-July 2025	Water Excellence Center – Alexandria University, ICT Department
Evaluation	Assess effectiveness of conservation programs	Data analysis tools, feedback systems	Savings analytics	Annually	Water Excellence Center – Alexandria University, ICT Department



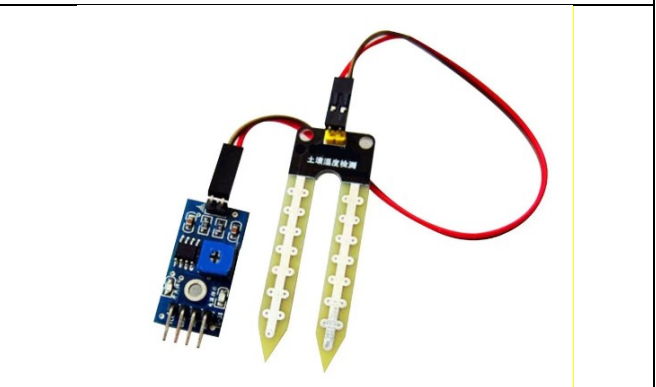
Water Conservation Digital Signage



In a remarkable demonstration of innovation and environmental responsibility, a student team from the Faculty of Engineering has developed a sea-cleaning robot that was showcased during the COP27 Climate Summit. The robot is designed to address critical environmental challenges and promote sustainable practices for preserving our oceans



Rainwater collection tank sensors



Soil Moisture Sensors



Smart Water Monitoring Systems

Description:

- **Planning:**

1) Promote **awareness** to encourage the campus community to actively participate in water-saving programs through **Water Conservation Digital Signage**. Use digital displays across campus to showcase water usage statistics, water-saving tips, and the impact of conservation efforts.

As a result of increased awareness among students, a sea-cleaning robot was developed by a team of students from the Faculty of Engineering during the COP27 Climate Summit. The project involves creating an environmentally friendly vehicle that operates using electricity and solar energy, producing no emissions. Its purpose is to remove waste and oil from the seas while compiling important statistics on the impact of climate change on marine life and the environment, including coral reefs and fish. This project aims to protect the environment from waste by focusing on cleaning ports and coasts polluted by various types of waste, especially plastic, to preserve marine ecosystems. Additionally, the robot is designed to dive underwater. Many companies were interested in sponsoring this project and expanding it to benefit Egypt and the world. This initiative reflects the growing awareness among students.

2) Apply **Rainwater Harvesting Systems** by installing ICT-based sensors in rainwater collection tanks to monitor water levels and usage in real-time. This data will help optimize the use of harvested rainwater for campus needs such as irrigation, toilet flushing, and cleaning.

3) Implement **Smart Water Monitoring Systems** in campus gardens using IoT sensors to track water usage and detect leaks.

4) Utilize **Soil Moisture Sensors** by employing ICT-based sensors to measure soil moisture content, ensuring efficient irrigation practices, especially in the botanic garden of Faculty of Science.

- **Implementation:**

1) Promote water conservation awareness by displaying smart screens across the campus.

2) Install ICT-based sensors in rainwater harvesting tanks to monitor water levels and usage in real time.

3) Install smart water meters and sensors across the campus to track water consumption in real time, monitor usage patterns, and identify areas of inefficiency.

4) Install ICT sensors to detect water leaks in real time by monitoring pressure changes in pipes. This helps quickly identify leaks, preventing water wastage and reducing repair costs.

5) Install ICT-based moisture sensors in the soil to measure moisture content, If the moisture level drops below a certain threshold, the system can automatically activate the irrigation system.

- **Monitoring:**

- Track water usage in buildings, laboratories, and irrigation systems.

- Calculate savings from conservation efforts by comparing this year's water usage to last year's consumption.

- Identify leaks and reducing repair costs.



- **Evaluation:**

Evaluate the effectiveness of water conservation programs by leveraging data analysis tools and feedback systems to assess performance and outcomes.

By integrating ICT into water management, university campus can promote sustainability, reduce water waste, and ensure the reliable supply of high-quality water. These systems not only improve efficiency but also support long-term environmental and financial goals.