Pharos University in Alexandria
Vice President for Graduate Studies & Research
International Ranking Committee

THE Impact Ranking
SDG6 Report

SDG 6 Clean Water and Sanitation

Pharos University in Alexandria is paying a lot of attention to the clean water and sanitation issues. This is in the form of initiatives, courses, projects, and cooperation agreements. The following are some examples of the university's efforts to address clean water and sanitation.

University management plan for water conservation:

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Clean Water and Sanitation Events

Sustainability in Education Project

Posted On: May 13, 2024

As part of its commitment to the Sustainability in Education Project, PUA's International Relations Department concluded an agreement with Technological University Dublin (TU Dublin), a strategic partner of PUA, to provide a professional diploma program in sustainability in education. Under this agreement, PUA nominated faculty members from various faculties to participate in the program, equipping them with the essential tools to incorporate sustainability principles into their teaching methods.

Over a duration of six months, these faculty members engaged in workshops and fulfilled assignments to augment their expertise and capabilities. Additionally, representatives from diverse faculties showcased their effective integration of sustainability principles into their instructional approaches.

URL: https://www.pua.edu.eg/sustainability-in-education-project/

Medicinal Plants and Sustainability

Posted On: December 26, 2024

PUA's Faculty of Pharmacy demonstrates its commitment to raising awareness about the United Nations' Sustainable Development Goals (SDGs). In this context, senior students conducted a research activity titled "Medicinal Plants and Sustainability," highlighting the role of medicinal plants in achieving these goals:

1. Goal Two: Zero Hunger – end hunger and achieve food security utilizing plants with high nutritional value to improve nutrition and treat deficiencies.
2. Goal Three: Good Health and Well-Being – Using medicinal plant extracts to promote health and support natural treatments.
3. Goal Four: Quality Education – Providing high-quality education at the faculty, enriching knowledge on medicinal plants and their sustainable applications.
4. Goal Five: Gender Equality – Showcasing opportunities for female pharmacists to lead projects producing natural hair and skincare products, now recognized as popular brands.
5. Goal Six: Clean Water and Sanitation – Demonstrating Moringa seeds' effectiveness in purifying water.
6. Goal Eight: Decent Work and Economic Growth – Highlighting the cultivation of medicinal and aromatic plants as a promising export sector that supports economic growth.
7. Goal Thirteen: Climate Action – Explaining how plants reduce carbon emissions and improve air quality.
8. Goal Fifteen: Life on Land – Preserving biodiversity by classifying plants and protecting them in scientific botanical gardens like Orman Garden.

This research activity underscores the faculty's efforts to enhance students' understanding of medicinal plants' crucial role in supporting sustainable development, while fostering practical applications of environmental and pharmaceutical education.

https://www.pua.edu.eg/medicinal-plants-and-sustainability/

Research and International Publishing Administration (RIPA)
Materials Science Technology (MST) Research School

Vision:

To be a leading research group in materials science and technology in Egypt and the wider region, recognized for pioneering innovative materials that drive scientific advancement and industrial transformation.

Mission:

We conduct cutting-edge research in materials science and technology, fostering innovation through collaboration, knowledge-sharing, and practical applications that address both scientific and industrial needs in Egypt and beyond.

- Preparation & Characterization
- Radiation Shielding
- Biological activity
- Water treatment
- Al in materials science and technology
- Powder Metallurgy

https://www.pua.edu.eg/research-and-international-publishing-administration-ripa/materials-science-technology-mst-research-school/

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https://www.pua.edu.eg/research-and-international-publishing-administration-ripa/materials-science-technology-mst-research-school/vision-and-mission/water-treatment/

Research and International Publishing Administration (RIPA)
Materials Science Technology (MST) Research School
Water Treatment

Vision:

Our research group aspires to become a regional and global leader in the field of water treatment research. We envision a future where:

Every individual has access to safe, affordable, and reliable water, regardless of geographic or socio- economic barriers.

Cutting-edge research drives policy and infrastructure development in water and wastewater management.

Our discoveries lead to breakthrough solutions that address emerging contaminants, climate change impacts, water scarcity, and aging water infrastructure.

We foster a dynamic research environment that attracts top talent and encourages creative problem- solving and interdisciplinary collaboration.

Our group influences both local and global communities by promoting resilient, inclusive, and sustainable water systems.

Mission:

Our mission is to conduct cutting-edge research that addresses critical challenges in water quality, purification, and sustainability. We aim to develop and optimize innovative, affordable, and scalable water treatment technologies, ranging from conventional processes to advanced methods such as membrane filtration, adsorption, biological treatment, and nanotechnology. Through a commitment to interdisciplinary collaboration, environmental stewardship, and scientific excellence, we seek to:

Ensure access to safe and clean water for diverse populations, including marginalized and underserved communities.

Mitigate environmental impacts associated with wastewater and industrial effluents.

Partner with industry, government, and non-governmental organizations to translate research into real-world applications.

Promote sustainable water management practices that align with the UN Sustainable Development Goals (SDGs), particularly Goal 6: Clean Water and Sanitation

Objectives:
The subthemes that a Water Treatment Research Group can adopt:

Advanced Treatment Technologies

- Adsorption
- Advanced oxidation processes (AOPs)
- Photocatalysis treatment

Water Treatment Materials

- Green adsorbents (e.g., plant-based materials, biochar).
- Synthetic (Engineered) adsorbents.
- Catalysts.
- Photo catalysts.

Emerging Contaminants and Micropollutants

- Pharmaceuticals, dyes, and organic materials.

Water Reuse

- Industrial wastewater recycling.

https://www.pua.edu.eg/research-and-international-publishing-administration-ripa/materials-science-technology-mst-research-school/vision-and-mission/water-treatment/

A Lecture on Wastewater Management
Posted On: March 18, 2025

As part of the second phase of the "Green Pharos" campaign, and based on the Alexandria Wastewater Company's strategies to adapt to climate change and reduce carbon emissions, and in line with the campaign's objectives, Dr. Iman Ahmed Gohar, General Manager of Research and Development at the Wastewater Company, delivered a distinguished lecture. The lecture addressed the company's strategy for addressing climate change and reducing carbon emissions, as part of its ongoing efforts to adopt the concept of sustainable green thinking.

During the lecture, Dr. Iman explained the importance of green thinking as a key tool for achieving sustainable development, with a focus on developing innovative solutions that contribute to preserving the environment and reducing the negative impacts resulting from wastewater treatment processes. She also emphasized the importance of integrating scientific research into the development of wastewater systems, while leveraging student projects and master's and doctoral research, which are a fundamental pillar in providing scientific solutions to address environmental challenges.

Dr. Iman reviewed the strategies adopted to achieve optimal use of treatment products, which enhances the company's role in preserving the environment and reducing the negative impacts on natural resources. She also emphasized the role of sustainable innovation in combining scientific knowledge with modern technology, contributing to achieving a balance between environmental and urban development.

This effort comes within the framework of the national "Green Pharos" campaign, which aims to spread the culture of green thinking and provide sustainable solutions across various sectors, enhancing society's ability to adapt to contemporary environmental challenges and contributing to protecting planet Earth for future generations.

https://www.pua.edu.eg/a-lecture-on-wastewater-management/

A Field Visit to the Eastern Water Purification Plant
Posted On: April 18, 2024

The Construction Engineering and Management Department of PUA's Faculty of Engineering has recently paid a field visit to the Eastern Water Purification Plant in Alexandria. Established in 1860, this facility stands as one of the oldest stations managed by the Water Company, boasting a capacity of 510,000 cubic meters per day. Accredited with ISO 9001-2015, ISO 14001-2015, and OHSAS 18001:2007 certifications, it underscores a commitment to stringent quality and safety standards.

During the visit, students were afforded a comprehensive understanding of the various stages involved in the purification of drinking water. From the initial intake to the conduits, filtration retention basins, all the way to disinfection processes, participants gained insight into the intricate operations ensuring the delivery of safe water to consumers. Additionally, students had the opportunity to tour the facility's laboratory, witnessing firsthand the chemical and biological tests executed to guarantee water safety.

Reflecting on the experience, students lauded the invaluable educational opportunity provided by the visit, which bridged theoretical knowledge with practical application, thereby enhancing their understanding of their course.

https://www.pua.edu.eg/a-field-visit-to-the-eastern-water-purification-plant/

Wastewater Treatment

Wastewater and as per the records of the University Administration: Wastewater from washing rooms, kitchens, and laboratories is collected and channeled to a specialized company to manage the recycling process and get rid of toxic material in a safe way. The University has signed a contract with a specialized company for collection and treatment of wastewater in a sustainable way. This company was selected based on its environmental portfolio that ensures that water is reused in an environmentally friendly way. The company is responsible for treating water for reuse according to the quality of output, mainly in irrigating street trees in the neighborhood.

Free Drinking Water Provided

Drinking water: Drinking water quality is maintained at the University premises by installing 3-level filters at the source inlet to purify drinking water before use by university members.

Water Efficient Appliances Usage (e.g. hand washing taps, toilet flush, etc.)

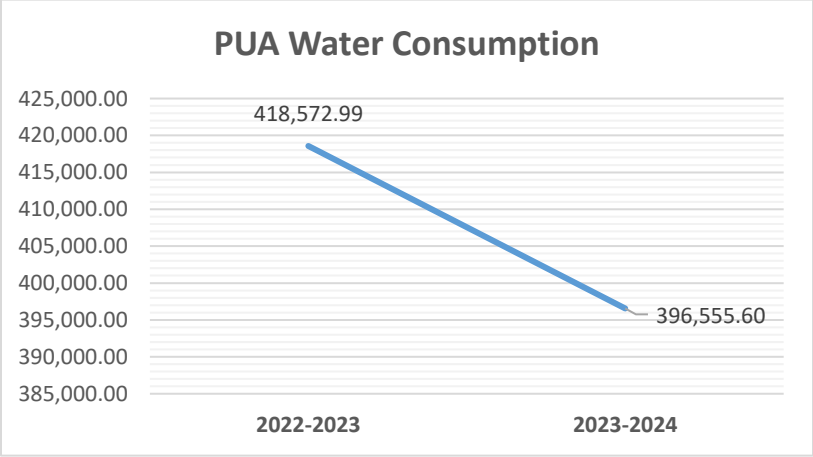
At Pharos University in Alexandria, all toilets and washbasins are equipped with water-efficient appliances to reduce overall water consumption. Low-flow taps and dual-flush toilet systems have been installed in all new buildings since 2020, resulting in approximately 25% reduction in water usage compared to previous fixtures.

In addition, awareness stickers are placed in all restrooms to encourage proper use of the dual-flush system and promote responsible water behavior among students and staff.

This initiative is part of the university's Water Conservation Policy aimed at minimizing freshwater demand and ensuring sustainable water management practices on campus.

PUA Water Consumption Reduction (2022–2023 to 2023–2024)

The graph shows a noticeable decrease in total water consumption from 418,572.99 m^3 in 2022–2023 to 396,555.60 m^3 in 2023–2024, representing a 5.26% reduction. This reduction reflects the positive impact of the university's Water Reuse Policy and AC Water Recycling Program implemented on campus.



Water Recycling Program

Wastewater is treated by recycling air conditioning water to irrigate plants across the campus by collecting AC water in bins and pipes to irrigate plants all over the campus.

AC Water Recycling Program to irrigate plants (Pharos University in Alexandria, Egypt)

Courses that Support Clean Water and Sanitation

No	Faculty in Pharos University	Course name	Course code	SDG of relevance
1	Applied Health Sciences Technology	Environmental Health	MGEH-101	SDG 6
2	Pharmacy	Instrumental Analysis	(PCD 203)	SDG 6
3	Engineering	Water and Wastewater	ES 401	SDG 6
4	Engineering	Water treatment	EP 328	SDG 6
5	Tourism and Hotel Management	Geography of Tourism	GEN 104_T	SDG 6
6	Tourism and Hotel Management	Ecotourism	TM 371	SDG 1 - SDG 3 - SDG 5 - SDG 6 - SDG 10 - SDG 11 - SDG 12 - SDG 15
7	Tourism and Hotel Management	Tourism Impact and Sustainability	TM 354	SDG 1 - SDG 6 - SDG 7 - SDG 8 - SDG 11 - SDG 13 - SDG 14 - SDG 15
8	Tourism and Hotel Management	Safe Food Service Management	HM 434	SDG 3 - SDG 6 - SDG 12
9	Tourism and Hotel Management	Hospitality Facilities Planning & Design	HM 451	SDG 6 - SDG 7 - SDG 9 - SDG 11
10	Arts and Design	Motion Graphics (1)	MA 323	SDG 1 - SDG 6 - SDG 8 - SDG 11
11	Arts and Design	Typography (1)	GD 471	SDG 6 - SDG 7 - SDG 9 - SDG 14 - SDG 15
12	Arts and Design	Typography (2)	GD 472	SDG 6 - SDG 7 - SDG 9 - SDG 14 - SDG 15
13	Arts and Design	Typography (3)	GD 571	SDG 6 - SDG 7 - SDG 9 - SDG 14 - SDG 15
14	Arts and Design	Graduation Project Research	GD 581	SDG 6 - SDG 8 - SDG 11 - SDG 12 - SDG 13

No	Faculty in Pharos University	Course name	Course code	SDG of relevance
15	Arts and Design	Graduation Project	GD 582	SDG 6 - SDG 8 - SDG 11 - SDG 12 - SDG 13
16	Arts and Design	Digital Photography (2)	GD 462	SDG 1 - SDG 6 - SDG 8 - SDG 11 - SDG 14 - SDG 15
17	Arts and Design	Digital Advertising Design	GD 522	SDG 3 - SDG 6 - SDG 13 - SDG 14 - SDG 15
18	Engineering	Graduation Project (1)	ES 400-1	SDG 6, SDG 7, SDG 8, SDG 9, SDG 11, SDG 14
19	Engineering	Graduation Project (2)	ES 400-2	SDG 6, SDG 7, SDG 8, SDG 9, SDG 11, SDG 14
20	Engineering	Water and Waste Water Engineering	ES 401_E	SDG 6 - SDG 14
21	Pharmacy and Drug Manufacturing	Pharmaceutical Analytical chemistry III	PCD 201	SDG 6
22	Pharmacy and Drug Manufacturing	Public Health	PMD 401	SDG 6
23	Engineering	Engineering Environment and Society	HU 161!!	SDG 3 - SDG 5 - SDG 6 - SDG 7 - SDG 8 - SDG 9 - SDG 11 - SDG 12 - SDG 13 - SDG 14 - SDG 15 - SDG 17
24	Financial and Administrative Sciences	Islamic Finance	BF858	SDG 1 - SDG 2 - SDG 3 - SDG 4 - SDG 5 - SDG 6 - SDG 7 - SDG 8 - SDG 9 - SDG 10 - SDG 11 - SDG 12 - SDG 13 - SDG 14 - SDG 15 - SDG 16 - SDG 17
25	Arts and Design	Project	GD582	SDG 4 - SDG 6 - SDG 8 - SDG 9 - SDG 10 - SDG 16
26	Arts and Design	Digital Photography (2)	GD462	SDG 1 - SDG 3 - SDG 4 - SDG 6 - SDG 11 - SDG 13

Publications that Address Clean Water and Sanitation (23 publications)

https://www.pua.edu.eg/wp-content/uploads/2025/11/PublicationsSDG6.pdf