6.5.1 Water Management Educational Opportunities

2023–2024

AASTMT provides diverse water management educational opportunities that align with the objectives of clean water and sanitation. These initiatives encompass educational programs, research projects, and collaborative efforts designed to promote sustainable water practices and advance water quality and resources management.

Free Educational Opportunities:

AASTMT Strengthens German Partnership to Advance Marine Sustainability and Water Research

The College of Maritime Transport and Technology at AASTMT welcomed a delegation from Freie Universität Berlin and Humboldt University under the DAAD-funded Ta'ziz Partnership program. The visit included tours of AASTMT's Marine Environment and Climate Labs, focusing on water quality, air monitoring, and climate impacts on marine ecosystems — reinforcing AASTMT's role in advancing SDG 6: Clean Water and Sanitation through international collaboration and sustainable research.

AASTMT Strengthens German Partnership to Advance Marine Sustainability and Water Research on AASTMT webpage

AASTMT Advances Sustainable Waste Management in Alexandria's Hospitality Sector

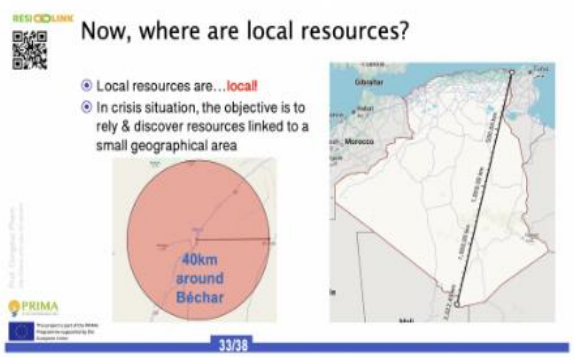
From September 14–19, 2024, Beatrice Vanek and Omar Abdelrahman Abulheija from BlackForest Solutions GmbH, in collaboration with the AASTMT, conducted hands-on waste management training across 23 hotels in Alexandria under the TouMaLi Project (Prevention of Tourism Marine Litter). The training focused on waste segregation at source, introducing color-coded bins, distributing guidelines and posters, and engaging hotel staff—including housekeeping, maintenance, and management—in practical sessions to promote sustainable waste practices.

AASTMT Advances Sustainable Waste Management in Alexandria's Hospitality Sector

Promoting Water Efficiency and Resilient Agri-Food Systems through the RESILINK Project

As an active partner in the RESILINK Project, the AAST contributed to advancing water-efficient, climate-resilient, and sustainable agri-food systems in alignment with SDG 6: Clean Water and Sanitation. On May 16th, 2024, Prof. C. Pham delivered a keynote speech at the 1st Mediterranean Fruit Symposium: Hub for Innovation, highlighting the RESILINK project's contribution to sustainable water and resource management in agri-food systems. The presentation emphasized how digital platforms and smart technologies—key elements of RESILINK—can enhance water efficiency, local innovation, and smallholder resilience, supporting SDG 6 (Clean Water and Sanitation) by promoting sustainable agricultural practices and optimized water use in the agro-food value chain.

On November 5th, 2024, Prof. Congduc Pham, coordinator of the RESILINK project from UPPA, delivered a keynote at the Smart Farming Workshop held during the IEEE EDiS 2024 International Conference on Embedded and Distributed Systems in Béchar, Algeria. His talk, titled *"Transdisciplinary Research for Sustainable Development: Illustration with PRIMA INTEL-IRRIS and PRIMA RESILINK,"* showcased how RESILINK integrates digital innovation, water-efficient technologies, and sustainable farming practices to address smallholder farmers' needs. The presentation emphasized the project's contribution to SDG 6 through optimized irrigation, resource-efficient systems, and sustainable agri-food solutions.



[Promoting Water Efficiency and Resilient Agri-Food Systems through the RESILINK Project]

Paid Educational Opportunities:

The AASTMT actively supports SDG 6 by offering a range of undergraduate and master's degree programs designed to enhance awareness and understanding of water-related issues. These programs are meticulously crafted to educate and empower individuals to address the global water crisis, ensuring clean water and sanitation for all. Through multidisciplinary Water, Energy and Environmental programs and courses and research initiatives, AASTMT equips its students with the knowledge and skills necessary to tackle challenges related to water resource management, sanitation, and sustainable water practices.

AASTMT Launches Professional Courses on Healthcare and Water Management Standards to Support SDG 6 & SDG 12

The AASTMT, in cooperation with the General Authority for Healthcare Accreditation and Regulation (GAHAR), has launched a new track of paid professional diploma programs designed to prepare qualified specialists in quality, sanitation, and water management within healthcare facilities. Through these courses, participants will receive comprehensive training that combines theory and practice in areas such as wastewater treatment, sanitation services, water quality monitoring, and pollution control. The programs are aligned with internationally accredited standards (ISQua/GAHAR 2021) and emphasize responsible consumption and production practices, ensuring more efficient use of water and sanitation resources. Graduates of the program earn a Professional Diploma from AASTMT, accredited by the Supreme Council of Universities, and may sit for the GAHAR certification exam to become an Egyptian Certified Accreditation Professional (EGYCAP). These certifications provide a pathway for professionals to work in hospital water management systems, sanitation departments, and quality control units, contributing directly to SDG 6 (Clean Water and Sanitation) and SDG 12 (Responsible Consumption and Production). This initiative reflects AASTMT's commitment to expanding educational opportunities in water and sanitation management, while supporting Egypt's Vision 2030 and strengthening national capacities in sustainable healthcare services.

AASTMT Launches Professional Courses on Healthcare and Water Management Standards to Support SDG 6 & SDG 12 on AASTMT webpage

AASTMT, AOI, and UCLan Sign Cooperation Agreement to Advance Training, Technology Transfer, and Sustainable Industry

The AASTMT, the Arab Organization for Industrialization (AOI), and the University of Central Lancashire (UCLan), UK, signed a cooperation agreement to provide AOI engineers and technicians with advanced training programs in the UK, supported by the European Union.

The initiative contributes to several UN Sustainable Development Goals:

- **SDG 4 (Quality Education):** by offering advanced professional training and building human capacity.
- **SDG 7 (Affordable and Clean Energy):** through programs on energy efficiency, renewable integration, and sustainable industrial practices.
- **SDG 8 (Decent Work and Economic Growth):** by enhancing youth employability and industrial competitiveness.
- **SDG 9 (Industry, Innovation, and Infrastructure):** by localizing technology, supporting digital transformation, and introducing Industry 4.0 applications.
- **SDG 6 (Clean Water and Sanitation):** indirectly, through modern industrial processes that reduce water use and wastewater pollution.
- **SDG 17 (Partnerships for the Goals):** by fostering international collaboration and knowledge transfer.

The cooperation also launched a joint training program to empower Egyptian graduates with skills in digital transformation, sustainable industry, and clean technology, while strengthening

Egypt's capacity to meet Vision 2030 targets. AASTMT President emphasized that the Academy, as a regional hub of expertise, is committed to developing Arab talent capable of leading innovation, promoting clean energy solutions, and ensuring sustainable resource management for the future.

AASTMT, AOI, and UCLan Sign Cooperation Agreement to Advance Training, Technology Transfer, and Sustainable Industry on AASTMT webpage

Undergraduate Engineering Courses

These disciplines include specialized areas that align with sustainability goals, such as water management, sanitation, and resources management, providing students with the knowledge to address challenges like water scarcity, pollution, and wastewater treatment.

Department	Course Title	*link*
ALL	Climate Change and Water Management	*https://aast.edu/en/colleges/ccit/smartvillage/news-details.php?language=1&view=1&unit_id=530&news_id=486101821&event_type_id=1*
ALL	Environmental Sciences and Technology	*https://lms.aast.edu/course/index.php?categoryid=56*
ALL	Chemistry	*https://aast.edu/en/colleges/coe/smartvillage/dept/contenttemp.php?page_id=42300007*
Construction & Building	Environmental & Sanitary Engineering	*https://aast.edu/en/programs-courses/program.php?unit_id=586&program_id=227&language_id=1*

Construction & Building	Water Resources Engineering	
Construction & Building	Irrigation & Drainage	
Construction & Building	Environmental Control and Energy in Buildings	
Construction & Building	Sanitary Engineering & Plumbing Installations	https://aast.edu/en/////////programs-courses/course-details.php?course_id=5806&unit_id=62&lnselect=2&lnselect=1&lnselect=2&lnselect=1&lnselect=2&lnselect=1&lnselect=2&lnselect=1
Construction & Building	Surface and Subsurface Hydrology	https://aast.edu/en/programs-courses/course-details.php?course_id=542&unit_id=62
Integrated Simulator Complex	River Nile Pollution Risk Assessment	https://www.aast.edu/en/complexes/isc/trcourse-details.php?course_id=3125&unit_id=212
Special training courses	Environment Protection and Crisis Management	https://www.aast.edu/en/complexes/isc/trprogramtemp.php?program_id=1&unit_id=212

More paid courses can be found on the following link:
Undergraduate Engineering Courses on AASTMT webpage
Undergraduate Engineering Courses on AASTMT webpage
Undergraduate Engineering Courses on AASTMT webpage

Environment Protection and Crisis Management Center

The Environment Protection and Crisis Management Center at AASTMT is a specialist training and research hub dedicated to advancing environmental protection, disaster preparedness, and sustainable development in the region. Equipped with state-of-the-art facilities—including a crisis-management simulator, an environmental analysis laboratory, an oil-spill training centre and a geospatial-information technology unit—the Center offers a wide array of professional and technical courses such as “Introduction to Environmental Disasters Management,” “Prevention and Combating Marine Pollution,” and “Oil Spill Crisis Management (IMO Level III)”. These programs enhance skills in environmental assessment, emergency response, contamination control and GIS analysis, thereby serving government agencies, industry professionals and academia in building capacity to confront water-and-environment-related challenges.

Environment Protection and Crisis Management Center on AASTMT webpage
Environment Protection and Crisis Management Center on AASTMT webpage

Natural Gas and Petrochemicals Simulator System Courses

The Natural Gas and Petrochemicals Simulator System in AASTMT offers a Ballast Water Operations Training course that directly supports SDG 6 by promoting responsible and sustainable water management in maritime operations. Through hands-on training on ballast water treatment systems, management plans, and international regulations, the course equips participants with the knowledge to prevent marine pollution, protect aquatic ecosystems from invasive species, and ensure safe disposal practices. This contributes to improving water quality and advancing global efforts toward sustainable and pollution-free marine environments.

Natural Gas and Petrochemicals Simulator System Courses on AASTMT webpage

Post Graduate Master of Science Program in Water Resources Engineering

The Construction & Building department in AASTMT offers a paid MSc course in water resource engineering by equipping students with the technical knowledge and practical skills needed to manage and protect water resources sustainably. Through topics such as coastal project planning, wastewater network design, and hydraulic modeling, students learn to design efficient irrigation systems, prevent water pollution, and optimize freshwater usage. The course also emphasizes the importance of sustainable hydrological and coastal management, ensuring reliable access to clean water, improved sanitation systems, and the long-term resilience of aquatic ecosystems.

Post Graduate Master of Science Program in Water Resources Engineering on AASTMT webpage

Post Graduate Master of Science Degree in Sustainable Management of Fisheries and Aquaculture (SMFA), Funded by the EU (Erasmus+)

The Master of Science in Sustainable Management of Fisheries and Aquaculture (SMFA) is a joint program established through the FishAqu Erasmus+ Project, in collaboration with European universities (Aveiro, Palermo, Dubrovnik, and Euro-Mediterranean) and four Egyptian institutions including AASTMT. The program aims to enhance scientific research and develop sustainable practices in fisheries and aquaculture by linking academic research with real-world applications. It equips graduates with the knowledge and technical skills needed to manage aquatic resources efficiently, address water-related environmental challenges, and promote sustainable aquaculture practices. This program directly supports SDG 6 and SDG 14 through education, innovation, and international cooperation in sustainable water resource management.

Post Graduate Master of Science Degree in Sustainable Management of Fisheries and Aquaculture (SMFA), Funded by the EU (Erasmus+) on AASTMT webpage

Energy Management Service of AASTMT Productivity and Quality Institute (PQI) (Paid)

AASTMT PQI has a great role in supporting energy-efficient systems and offering paid courses that can significantly contribute to achieving SDG 6, Clean Water and Sanitation, particularly through quality control, safety management, and regulatory compliance, include:

1. **Environmental Facility Management and Infection Prevention Control**

- Ensures facilities adhere to environmental safety standards, crucial for sanitation.

2. **Understanding ISO 22000:2018 Food Safety Management System**

- Focuses on food safety, including water quality in the food industry, directly supporting safe water use in food production.

3. **Hazard Analysis and Risk-Based Preventive Controls in Food Industry**

- Covers preventive measures in food safety, impacting water quality and hygiene.

4. **Good Manufacturing Practices (GMPs) in Food Safety**

- Emphasizes practices that help prevent water contamination in food production.

5. **Microbiology and Chemistry Food Testing Methods**

- Includes testing for waterborne pathogens and chemical contaminants, supporting water quality monitoring.

6. **Food Safety Standards and Regulations**

- Encompasses regulations that safeguard water sources in food processing environments.

7. **Supply Chain Quality and Performance Management**

- Ensures quality management across supply chains, including water quality and waste management.

8. **Infection Control and Risk Management**

- Addresses infection prevention, which is critical for safe water management.

9. **Understanding ISO 17025:2017 for Testing and Calibration Laboratories**

- Supports laboratory competence, essential for testing water quality accurately.

10. **Patient Safety and Infection Control**

- While healthcare-focused, it also emphasizes infection control measures that impact water sanitation.

P&Q Paid Courses (2023-2024)		
Course	**Date**	**Link**
Environmental Management and ISO 14001 Lead Auditor Training	25 Sep 2024	https://www.aast.edu/en/institutes/pqi/news-details.php?language=1&view=1&unit_id=34&news_id=486103322&event_type_id=13
Food Safety and Sanitation-Focused Diplomas	6 Aug 2024	https://www.aast.edu/en/institutes/pqi/news-details.php?language=1&view=1&unit_id=34&news_id=486103315&event_type_id=13
Food Safety and Sanitation-Focused Diplomas	29 Oct 2024	https://www.aast.edu/en/institutes/pqi/news-details.php?language=1&view=1&unit_id=34&news_id=486103348&event_type_id=13

Energy Management Service of AASTMT Productivity and Quality Institute (PQI) (Paid) on AASTMT webpage
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AASTMT Leads Training Initiatives to Support Egypt's Sustainable Waste Management and SDG 6

The AASTMT actively supports Egypt's national program for an integrated solid waste management system, in partnership with the Ministry of Environment and the Ministry of Local Development. AASTMT contributed through training and technical capacity-building at the Sakkara Training Center, preparing engineers and local staff to operate sanitary landfills and manage waste recycling systems efficiently. These efforts help reduce pollution, protect water resources, and promote safe sanitation practices, directly advancing SDG 6 and Egypt Vision 2030.

AASTMT Leads Training Initiatives to Support Egypt's Sustainable Waste Management and SDG 6 on AASTMT webpage

Undergraduate Graduation Projects

The AASTMT actively advances SDG 6 by supporting diverse student graduation projects that raise awareness on water and sanitation challenges. These initiatives provide students with a platform to explore vital issues such as water resource management, wastewater treatment, groundwater protection, desalination, and water pollution control. Through applied research and innovative solutions, the projects address both local and global water scarcity and quality concerns, reinforcing the university's role in promoting sustainable water management and development.

1. College of Engineering & Technology: measure energy loss in hydraulic piping system. By knowing the pressure difference along PVC piping system, for various pump speeds for water and nanofluid.
2. Institute of Technical and Vocational Studies for Technical Education: Solar agriculture robot
3. College of Fisheries & Aquaculture: Environmental Assessment of Eco-Friendly Antifouling Paints in Abu Qir Bay Using Water Hyacinth Extract

4. College of International Transport and Logistics: Internet of Things (IoT) technologies to improve the quality and safety of fresh agricultural products, risk assessment in supply chains of Egyptian citrus exports, and a proposal for establishing an agricultural logistics centre in Matrouh Governorate.

Energy losses in hydraulic piping system

solar-powered agricultural robot

Environmental Assessment of Eco-Friendly Antifouling Paints in Abu Qir Bay Using Water Hyacinth Extract

Undergraduate Graduation Projects on AASTMT webpage
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