



Goal 12 – Responsible consumption and Production



Our Aim

Commitment to environmental protection and sustainable practices implemented through responsible management and minimisation of wastes. It also addresses some concerns like waste-conscious events, single-use packaging, low-carbon food options, and infrastructure for recycling. Students and staff members will learn about waste prevention and recycling, sustainable management of natural resources, and what a sustainable lifestyle looks like in practice. By participating in the planning of these activities, students get a taste of the leadership, organization, and advocacy skills needed to help achieve SDG 12.

Last Year Recorded

World wide 205

Arab Country

Egypt 4

Our Progress through 20/21

Teaching

1. Master in Health Logistics Management

Hospitals logistics management master degree is a program that is tailored for healthcare managers at all levels to be qualified to improve effectively and efficiently all aspects of healthcare organizations and to maintain a smooth flow of patients, data and medical supplies all over the hospital to achieve your remarkable goals in the most professional and efficient ways.



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We aim at crafting and developing a transferable learning experience through highly qualified instructors and innovative curricula that create a unique learning environment that pushes candidates to creativity excellency and professional integrity.

https://aast.edu/en/institutes/itli/programtemp.php?program_id=216&unit_id=237

Code	Title	Prerequisites
LHM 410	Medical Nutrition	na
LHM 420	Hospital Infection & Waste Management	na
LHM 430	Hospital Medical Crises Management	na
LHM 440	Clinical Engineering	na
LHM_400	Project	na

2- Undergraduate Environmental & Sanitary Engineering Course

The course objective is introducing the student to the main sources of pollution, understanding the water quality management and wastewater treatment and disposal systems.

https://aast.edu/pheed/show_course11.php?get_code=CB532

3- Master in Marine Environment Conservation and Energy Efficiency Management

The purpose of this Master's program is to support the global societies with highly qualified and trained personnel at middle and high management levels by providing an unified high level postgraduate studies in the field of marine energy management and environment conservation that satisfies the needs of shipping and offshore industries, whether at sea or land based. The expected graduates will be able to be experienced enough to take proper decision, analyze and act in an environmentally pro-active way when considering policies, future prospective, production and resource utilization. However, program is seeking to broaden the scope of knowledge and skills of participants, contributing to capacity building in the field of sustainable development and energy efficiency management.

https://aast.edu/en/institutes/mpi/contenttemp.php?page_id=48100031

Initiatives



Sustainable Development Goals **Arab Academy for Science, Technology and Maritime Transport**

1- Major General Mahmoud Shaarawy, Minister of Local Development and Prof. Dr. Ismail Abdel Ghaffar, President of the Arab Academy for Science and Technology and Maritime Transport, signed a cooperation protocol for planning and implementing green academy

Major General Mahmoud Shaarawy, Minister of Local Development and Prof. Dr. Ismail Abdel Ghaffar, President of the Arab Academy for Science and Technology and Maritime Transport, signed a cooperation protocol for planning and implementing green academy campaign "always, not day" _with the attendance of the leaders of the Ministry of Local Development and the Arab Academy for Science, Technology and Maritime Transport.

Mai. Gen. Shaarawy confirmed that the first program of the system is currently being implemented with a cost of 8.5 billion pounds until 2023, indicating that so far accumulations have been raised in 38 sites in 7 governorates, namely Al Beheira, Al Sharqia, Fayoum, Beni Suef, Luxor, Aswan and Gharbia also 9 waste recycling lines have been created in 3 governorates at a cost of 371 million pounds " the signing of the protocol comes Within the framework of implementing the directives of the state of necessity for civil society organizations, educational institutions and youth initiatives to participate in raising awareness in the new hygiene system that costs 12 billion pounds and is implemented by the Ministry of Local Development in a strategic partnership with the ministries of environment, Military Production, planning. finance, the Arab Organization for Industrialization and community organizations Civil, private and informal sectors."The Minister pointed out as well that the protocol aims to Launch an awareness campaign at all branches of the Academy on the importance of environmental support and the preservation of the environment in all possible ways.Dr. Ismail Abdel Ghaffar, President of the arab Academy for Technological Sciences and Maritime Transport confirmed the presence of a number of volunteer students from the arabe academy at the campaign, and organization a series of awareness seminars for participant students with the participation of a number of the Community development associations and the Smart Village Development Management Company.

2- 1st Place in Enactus AAST Portsaid & Food and Agriculture Organization of the United Nations (FAO)

Enactus AAST Port Said team won first place in the Enactus FAO [Food and Agriculture Organization of the United Nations \(FAO\)](#) competition conducted by the United Nations. The Enactus team competed against the Enactus teams of Tunisia, Egypt and Morocco. The presentation was about their MycoTech project which includes mycobrick and mycopottian, and will be presented in the UAE on February 24-25 at Dubai Expo 2020



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3- AASTMT Seminar About Reducing the Use of Single Use Plastic

The Arab Academy for Science, Technology and Maritime Transport (AASTMT) organized a seminar as keeping with AASTMT initiative on "Reducing The Use of Single Use Plastic in its campuses". AASTMT seminar was held on Sunday 19- 12- 2021, under the patronage and with the participation of H.E Dr. Yasmine Fouad - Minister of Environment of Egypt, and H.E Prof. Dr. Ismail Abdel Ghafar Ismail Farag - AASTMT President, in the presence of group of AASTMT deans and Officials from various campuses.

AASTMT initiative comes within AASTMT framework in achieving sustainable development goals, and support of the "Go Green" initiative launched by the Egyptian Ministry of Environment, which aims to change behaviors, spread environmental awareness and urge citizens -young people in particular - to protect the environment, natural resources and protectorates to maintain sustainability and preserve future generations rights

https://aast.edu/en/////news.php?page=69&event=6239&unit_id=1&language=1&get_event_type=1



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مبادرة الأكاديمية العربية للعلوم والتكنولوجيا والنقل البحري
لرفع الوعي البيئي داخل مقراتها
تحت مظلة حملة وزارة البيئة إتحضر للأخضر
للحد من إستخدام البلاستيك أحادي الإستخدام

بتشريف وتحت رعاية
معالي الدكتورة/ ياسمين فؤاد
وزيرة البيئة

وبحضور
سعادة الأستاذ الدكتور/ إسماعيل عبد الغفار إسماعيل فرج
رئيس الأكاديمية العربية للعلوم والتكنولوجيا والنقل البحري

يوم الأحد الموافق 19 ديسمبر 2021 سعت 10:00 وحتى 12:00 ظهراً (توقيت القاهرة)

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DEC

4. February 2020: Invent for the Planet

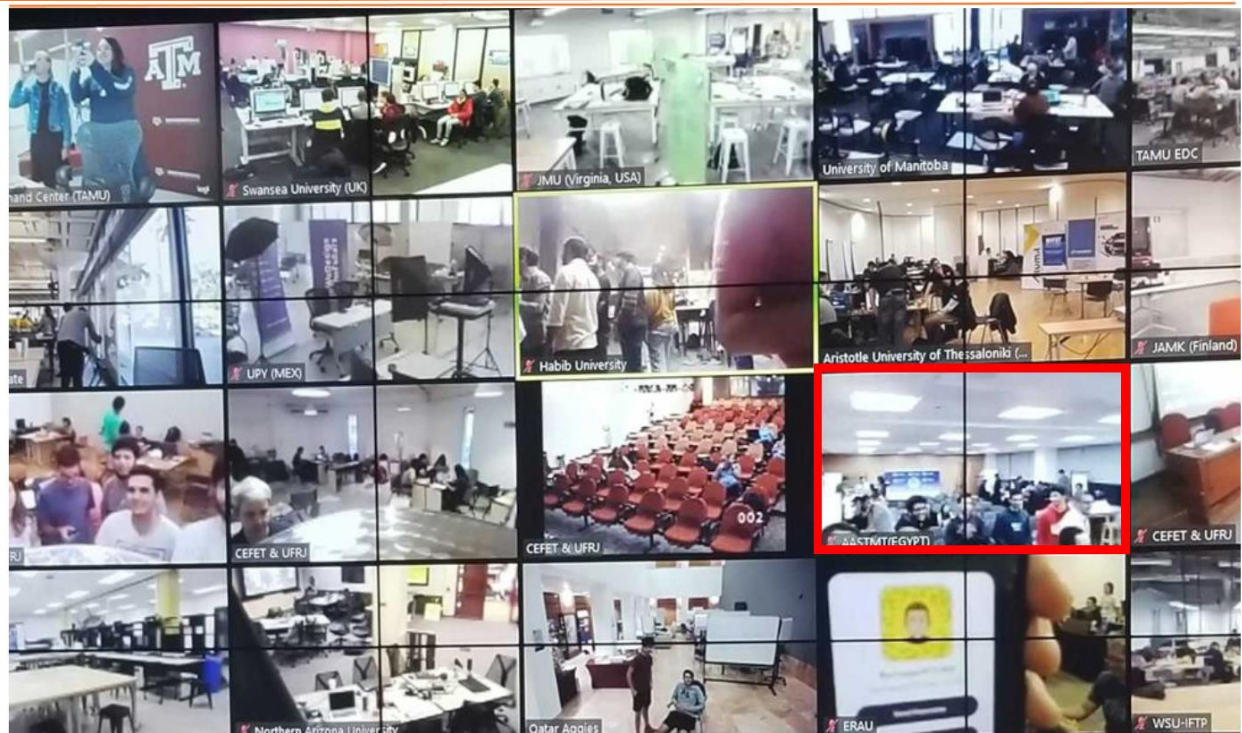
Invent for the Planet global challenge has been held in AASTMT Smart Village Campus February 2020 for the second time after 2018. Invent for the Planet is hosted by Texas A&M University and it is a 48-hour intensive design competition, which took place at more than 30 universities around the world. Students developed solutions for major issues facing society that have arisen as our world continues to modernize and become more populated. Over the course of two days, students at each campus formed teams, developed a plan and prototype, created a business plan and pitched it to a panel of judges. These students' activities and challenges cultivate the ability of the students to communicate and work effectively in teams and also to teach students how to analyze and implement interdisciplinary engineering projects.

https://aast.edu/en/colleges/coe/smartvillage/dept/contenttemp.php?page_id=529000

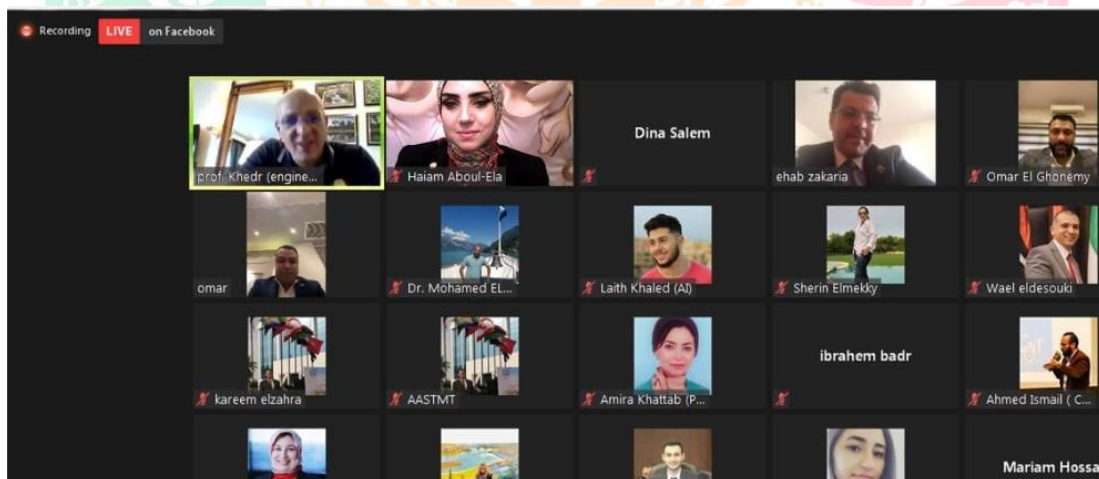
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5- Participation of the faculty of Fisheries and Aquacultural Technology in the Virtual open Day



https://aast.edu/en/news.php?language=1&view=1&unit_id=491&event=43&get_event_type=1

6- SDG Awareness Setion



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An introductory session on entrepreneurship to raise awareness of the sustainable development goals (aast.edu)

https://aast.edu/en/news.php?unit_id=656&language=1&page=33&event=469&get_event_type=1

An introductory session on entrepreneurship to raise awareness of the sustainable development goals

An introductory session on the field of entrepreneurship to encourage and educate students about the goals of sustainable development through active participation in the Enactus competition, which is interested in encouraging and educating university youth to find new ideas that help in sustainable development

PUBLISHED ON: MONDAY, 01 NOV 2021

TAGS: SUSTAINABLE, EDUCATING, ENCOURAGING



7. A seminar for students of the Faculty of Management under the Department of Environmental Conservation and the benefits of reducing energy consumption on the environment

An Orientation session for students of College of Management and Technology Alamein Hull on Sunday 12th December 2021 about “The Importance of Going Green and the benefits of reducing plastic consumption for the environment” presented by Dr. Mahmoud El Bishbishy - Former President of Rotary Alexandria West.

https://aast.edu/en/news.php?unit_id=656&language=1&event=511&get_event_type=1



Research

1- Aquaculture Research Center

The center aims to create models of new development projects in the field of aquaculture by studying scientific problems in aquaculture projects and developing appropriate solutions.

The center works with 3 integrated tasks (water- energy and food).

- 1- Production of Bio-diesel from waste using cooking oil:
- 2- Food production using Hydroponic system:
- 3- Rain water harvesting for plant production in the Hydroponic system:
- 4- Compositing of organic waste:

https://www.aast.edu/en/sdg/goals.php?menutab=7&unit_item=1206&page_id=120600018

- 1- Biodiesel production:



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A mixer reactor of 1000 liter capacity was developed by the Aquaculture Research Center for biodiesel production using the transesterification process. Bio-diesel production started using the waste used cooking oil produced from kitchen wastes in the main campus in Abu Qir and from the surrounding restaurants and hotels from Alexandria city. They produced biodiesel used in the production of electricity using a diesel generator. The produced energy was used in the general activities of the Aquaculture Research Center.



2- Food production using Hydroponic system:

Hydroponics is the cultivation of plants without using soil. Hydroponic flowers, herbs, and vegetables are planted in inert growing media and supplied with nutrient-rich solutions, oxygen, and water.

This system fosters rapid growth, stronger yields, and superior quality. When a plant is grown in soil, its roots are perpetually searching for the necessary nutrition to support the plant. If a plant's



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root system is exposed directly to water and nutrition, the plant does not have to exert any energy in sustaining itself. The energy the roots would have expended acquiring food and water can be redirected into the plant's maturation.

Hydroponic innovations have proven direct exposure to nutrient-filled water can be a more effective and versatile method of growth than traditional irrigation. The hydroponic system dramatically reduced the amount of fresh water needed by plants to 95% and increased the plant production by 3 folds than the traditional land cultivation system.



3- Rain water harvesting for plant production in the Hydroponic system:



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Alexandria city is subjected to heavy rainy seasons extended from November to April. In the Aquaculture Research Center rainwater is collected from the roofs of the green house and collected in 10 water tanks each one of 500 Liter capacity. The collected water is used in the hydroponic system and fertilizer production units throughout the year.



4- Composting of organic waste:

Organic wastes produced from the landscape areas in the main campus in Abu Qir and from the kitchen scraps are of great importance. These wastes are converted into soluble organic fertilizers and used in the Earthworm production unit which mainly produce vermi-compost used as organic fertilizers for the plant production in the hydroponic system and worms production used in the experiments of animal feed production.

3- Publications

The faculty member of the aast are keen to conduct research related to waste and food production and publish international articles in this regard

<http://apc.aast.edu/ojs/index.php/RESD/article/view/03.2.189>



2-Agriculture Waste Recruiting

The agricultural waste produced from the landscape activities in the main campus as well as the main kitchen of the students in the Arab Academy are considered as a great source of wastes. The Aquaculture Research Center (ARC) in the main campus is responsible for recycling these wastes. The recycling system, consists of 2 paths. In the first one these wastes are collected and introduced to the earthworm composting pens. The produced vermicomposte is then used back as an organic fertilizer used in the landscape actives. On the other hand, the sexual production of the worms leads to an increase in their number (3 folds). Part of the produced worms is then used in the fish culture activities in the ARC. In the second path the wastes are used to produce bio-gas and soluble fertilizers. The produced bio-gas is used in the different ARC actives as an alternative source of energy.





3- Funded Research Projects

1- CAMPUS SMART RECYCLING SYSTEM TO TURN FOOD ORGANIC WASTES AND RECYCLABLES INTO ECONOMIC VALUE PRODUCTS

The proposed project is about build and implement sustainable self-sufficient recycling system to turn AASTMT campus food organic wastes and recyclables into valuable products that have economical values, which can be used to reduce the campus running expanses. The proposed system is targeting only 3 types of campus wastes (Organic food remains -Plastic tableware - aluminum cans). The main objectives of the project are: • Adding an economic value to the organic food wastes instead of dumping it. • Reducing the campus running cost by: Producing percentage of the campus disposable plastic tableware using AASTMT owned plastic injection machines reside at ISC. Reducing the campus budget for purchasing: ▪ Fertilizers used in campus cultivated areas. ▪ Aluminum raw materials for student's graduation projects. These objectives will be achieved by manufacturing: • Portable compost unit that produce organic fertilizer from garbage. • 2 molds for the AASTMT plastic injection machine. • Plastic washing, drying and disinfection unit to recycle the plastic tableware. • Aluminum can crusher machine to reduce the storing size of the cans until melting it. • Electrical furnace to melt aluminum cans into raw bars.

https://aast.edu/en/scientific-research/projects/project.php?uid=16&proj_id=29

Funded by the AASTMT

2- PROJECT: COMPOSTING THE ORGANIC WASTES INTO AN ORGANIC FERTILIZERS USING THE EARTHWORM EISENIA FETIDA (RED WIGGLER)

Recycling the organic waste is considered as a great problem allover the world and especially in the Arab countries which have an increase rate of population and development. Most of these organic wastes are dumped in landfills and a very few are buried in specially designed underground places. The decomposing of such organic wastes leads to the production of greenhouse gases as CO₂ and methane. Also, it causes many problems to the underground water. The current project aims to the building a sustainable composting unit for the disposal of the organic wastes using the earthworm which will feed on them. After digesting the worms for these organic wastes, it produced a cast called vermicompost which is very rich in organic nutrients as well as growth hormones which will be very useful for plant growth. Moreover, the production rate of these worms is very high and also its protein content reach 70%. So, the dried worm meal can be used as a supplementary feed for fish and poultry. This in turn will decrease the fish and poultry production coast and hence decrease the overall prices of such important human food. So the current project is trying to solve the problem of organic wastes in cities and also converting them to a valuable and important product. Moreover, such techniques will decrease the overall emission of greenhouse gases.

Funded by AASTMT



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https://aast.edu/en/scientific-research/projects/project.php?uid=16&proj_id=27





Public Engagement

1- VeryNile lecture

VeryNile was created in 2018 as an initiative that breaks boundaries through its wide range of ideas, strong commitment to action, and ability to bring together multi-sectoral volunteers and partners. The Nile is a symbol of Egyptian heritage and a source of life for Egypt. However, according to the World Economic Forum, it is also one of 10 rivers that contribute 90% of the garbage in the world's oceans. By cleaning the Nile, raising awareness about the importance of reducing plastic consumption, and empowering local communities, VeryNile ensures that its impact is not just clear on a local and regional level, but on a global one as well.

Architect Mostafa Habib presented the lecture on the initiative's process starting from fishing out the waste to clean up the Nile, to recycling and up-cycling the waste to various products and materials.

2- The participation of the Rotaract team of El Alamein in supporting the United Nations goals for sustainable development

Some students from the Rotaract team of El Alamein participated in supporting the United Nations sustainable development goals by helping to clean one of the beaches on the northern coast and separating waste from paper and plastic to preserve the environment as part of the activities of the third El Alamein Students





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3- Environment and entrepreneurship workshop in the presence of his excellency the Minister of the Environment and the head of the Academy

The Arab Academy for Science, Technology and Maritime Transport organized a meeting entitled "

Entrepreneurship and Environmental Conservation " for Arab Academy students on Sunday, February 21, 2021 via Zoom.

with presence and participation of:

- Her Excellency Dr. Yasmine Fouad, Minister of Environment.
- His Excellency Dr. Ismail Abdel Ghaffar Ismail Faraj, President of the Academy.
- Consultants and experts in different areas of environment



The meeting's agenda was how to support youth in setting up projects related to the environment, as well as how to provide the necessary training and funding for them. Her Excellency, Minister of Environment, Dr. Yasmine Fouad, expressed her happiness with the participation of Academic students in the " entrepreneurship and environmental conservation " meeting, noting that the AST is a race to organize and hold important seminars and conferences in addition to its great role in helping and training young people in the localities to deal with the solid waste system, many environmental files and research projects in cooperation with the Ministry. At the beginning of his speech, His Excellency Dr. Ismail Abdel Ghaffar Ismail Faraj, President of the Academy, extended his great welcome to Her Excellency Dr. Yasmine Fouad, Minister of Environment and to the Gentlemen, attending the meeting, noting that the participation of Her Excellency confirms the extent of the interest given by the Arab Republic of Egypt in the field of environment and youth support. The academy's president added that the academy is keen to support the Egyptian and Arab youth in all scientific fields, including the environment file. Today's meeting coincides with five years since the establishment of the Entrepreneurship Center in the Academy, which succeeded in delivering many achievements such as " Egyptian Entrepreneurship Rally - Egyptian Pioneers Rally ". His Excellency stated that the Academy is doing every effort to help support youth and that there are many research projects through which the Academy collaborates with the Ministry of Environment.

3- Consultancy Services



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To qualify companies, organizations and entities seeking to establish and implement quality, environmental, health and safety, energy, and information security management systems as well as organizational excellence.

The Institute undertakes productivity improvement projects, and manages downsizing and privatizing initiatives with all underlying issues. The Productivity and Quality Institute pre-qualification in this domain contains a long list of companies both in Egypt and in the Arab world working in various sectors of manufacturing, Oil and Gas and service industries. We assist our clients to achieve and maintain certification of their management systems to international standards such as Environmental Management Systems ISO 14001.

https://aast.edu/en/institutes/pqi/contenttemp_item.php?unit_item=342&page_id=34200001

Case Study

Organic wastes produced from the landscape areas in the main campus in Abu Qir and from the kitchen scraps are of great importance. These wastes are converted into soluble organic fertilizers and used in the Earthworm production unit which mainly produce vermi-compost used as an organic fertilizer for the plant production in the hydroponic system and worms production used in the experiments of animal feed production.





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