



Sustainability Report



Cairo University
2023

Prepared by
Sustainability Office Team



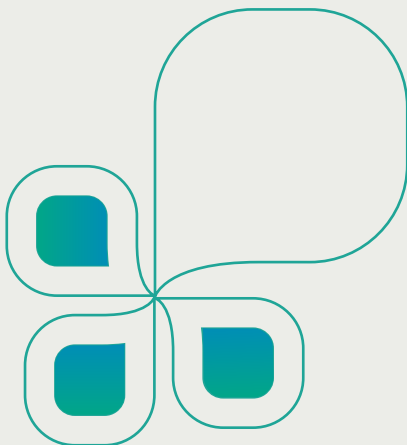
Cairo University 2023 Sustainability Report

About this Report

This is 3rd Cairo University' Sustainability Report. This report is intended to be a tool to directly engage students, teachers, professional staff and the local community in the strategies and results of our University. The data in this report demonstrates continued Cairo University' commitment to sustainability.

This report describes in details how Cairo University enhances its research and teaching mission while being committed to its social responsibility, and recognizes that the challenges it faces are complex and interrelated and require an ever evolving approach to achieving sustainability.

The following report illustrates that Sustainability at CU is based on three main pillars: economy, environment and society in order to achieve a greener, equitable and sustainable world. The report also showed that CU's strategic vision encompasses a variety of areas aimed at enhancing the university's sustainability, such as teaching, research, campus operations, community, and public involvement.





Prof. Dr. Mohamed ElKhosht
Cairo University president

Cairo University president speech

Cairo University has been making attempts to implement sustainable development generally and in their operations specifically, with the goal of decreasing the environmental effects of their operations. Cairo University (CU) is regarded as the leading mother university among other younger universities in Egypt. In response to the increase in position, CU has created a sustainable extension plan for its campus. Therefore, it's critical to make sure that all of the resources that are currently available may be used responsibly without endangering the interests of the next generation. In accordance with Egypt's Vision 2030, the objectives of the United Nations climate change conference (COP27) hosted by Egypt in 2022, and other national development projects adopted by the Egyptian government, CU has been engaged in a number of initiatives towards environmental sustainability. Cairo University began to create a sustainable campus that basically advances its research and teaching mission while adhering to its social responsibility. As the challenges it faces are complex, interconnected and require an ever-evolving approach to achieving sustainability, the university strives to develop a strong community that supports the preservation of all who pass through its gates by enhancing the sustainability in university, including teaching, research, campus processes, community inside campus and public engagement.



Prof. Dr. Mohamed Samy

Vice president For Community Service and environment

Cairo University president vice chair for Community Service & Environmental Development Speech

Cairo University (CU) has taken various steps to reduce its negative impact on the economy, society, and environment, as well as integrate sustainability into its curricula and research programs. It was among the first Egyptian universities to implement sustainability practices in areas such as policies, education, research, campus operations, transportation, environmental quality, waste management, community engagement, and cooperation agreements. CU established a Sustainability Office (SO) that supervises the implementation of sustainability policies, including the establishment of green offices in each faculty and institute, a sustainability pledge, and a guide for students to lead sustainable lives. The SO has also developed sustainability and action plans. In terms of education and research, almost %65 of the courses offered at CU are related to sustainability. Additionally, all research calls at CU are focused on addressing climate change. Sustainable transportation options are also emphasized to reduce the campus's carbon footprint. CU also advances by many steps in transforming to clean energy, encouraged students to use bicycles, metro, etc. Many inovative stratigies for sustaiability development in Cairo University have been setteld in recent years such as plans to install solar cells in all its buildings to generate renewable energy. plans to set up a recycling waste bank within two years to manage the recycling process and promote the 3 Rs (Reduce, Reuse, Recycle) system on campus. Additionally, CU intends to establish a biogas station to further enhance renewable energy production on campus.

Sustainability Office Team



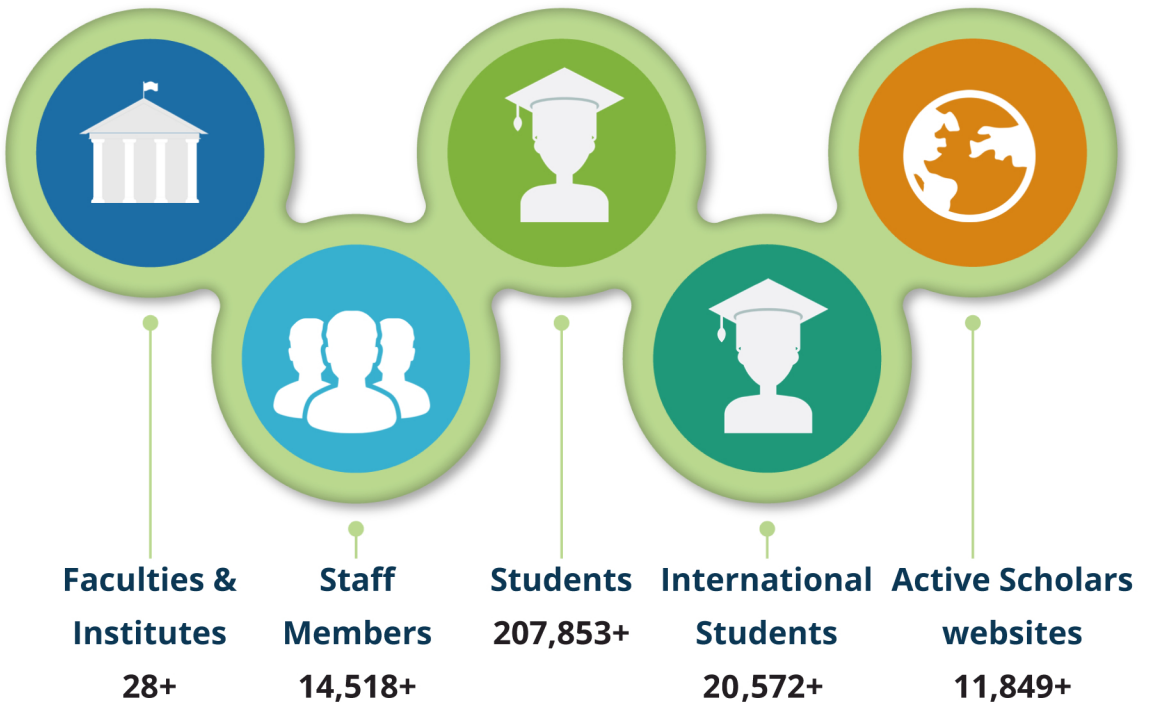
Prof. Sohair Ramadan Fahmy

General Coordinator of Sustainability Office-
Cairo University



Associate Prof. Mohamed Naguib Mohamed Abdelghany
Executive Manager of Sustainability Office-
Cairo University

University Profile





About Cairo University

Cairo University was founded in 1908 and today contains 28 faculties/institutions in several scientific fields, with a total enrollment of approximately 207,853 students. Cairo University aspires to be a sustainable, healthy, and green university. Cairo University seeks to produce graduates with the moral, quality, and skills required to be global citizens. CU is dedicated to performing excellence-driven research and innovation, as well as providing academic services that serve society. CU has effectively carried out its objective of supplying education, research, and cultural services over the years. It is regarded as the mother university among Egypt's younger universities.

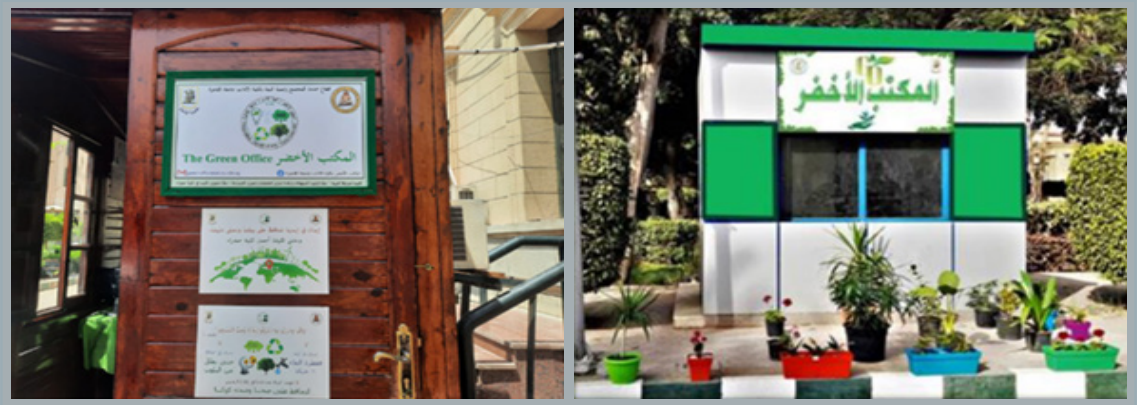
Cairo University also provides teaching and research facilities to Arab and foreign students and scientists, and it has gained international recognition. Cairo University is a comprehensive institution of higher learning in Giza, Egypt. Cairo University is consistently regarded as one of Egypt's and Africa's finest universities.

In QS ranking 2023, Cairo University was ranked the 1st in Egypt and the 5th across Africa, and it was rated 220-201 worldwide in sustainability. In the Academic Ranking of World Universities (ARWU) 2020 ranking, the university was ranked 1st in Egypt. It was rated 400-301 worldwide. It counts three Nobel Laureates among its graduates and is one of the 50 largest institutions of higher education in the world by enrollment. CU also ranked 290 in UI GreenMetric World University Ranking 2023.



Sustainability Office

Cairo University is working toward a greener and more sustainable future for its students, faculty, and the local community by putting a priority on sustainability and incorporating it into every element of university life. Cairo University has implemented a number of initiatives and programs, such as the creation of a sustainability office (SO) and the integration of sustainability into its educational and research plans, in an effort to become a model green university with a growing attention on environmental sustainability and a commitment to reducing its carbon footprint. In 2020, the SO became the first office to be established in a public university in Egypt. Additionally, a green office was established in all academic colleges and institutes of the CU (December 2022).



In order to promote a culture of sustainability, CU has taken numerous actions to communicate with all parties involved. The sustainability office has been placed on the university's website to display all activities and events <https://cu.edu.eg/ar/SB>. It has also been created a page for the office on Facebook. The SO developed the sustainability plan and sustainability action plan. In addition, SO has been established green council for youth that comprised from excellent and well sustainability educated students from different faculties and institutes of CU.

The sustainability office implemented many student competitions to support the culture of sustainability, such as the Cairo University and Sustainability Horizons Competition, "Cairo University and Water at the Heart of Climate Action," and "Virtual Reality and Sustainability Support." By expanding and advancing research, the university made a significant step toward its goal of building a strong community that supports the preservation of everyone who enters its gates by issuing the sustainability pledge and the University student guide to sustainability. In 2020 and 2023, CU was awarded the prestigious competition for the best environmentally friendly university in Egypt.

Principles



National Strategy for Higher Education and Scientific Research 2030



Sustainability Development Goals

National Strategy for Higher Education & Scientific Research 2030

The vision of the Ministry of Higher Education and Scientific Research is based on considering the comprehensive plan of the state of Egypt 2030, which aims to achieve a comprehensive vision for Egypt in the various fields of development, and depends mainly on studies of the comprehensive plan for development in the Egyptian country, and its relationship to sustainable development goals and various areas of economic growth with the aim of maximizing the role of the ministry's various institutions in achieving the active role of supporting development in various fields.

Economic, social, urban and environmental fields, by defining sustainable development goals and the concepts of the fourth generation of universities and economic activities in Egypt, the seven principles through which we reach the fourth generation of

universities can be developed and thus achieve Egypt's Vision 2030. The development of the educational process began from the education of the first generation to the second generation, where scientific research was introduced along with education and then to the third generation. When education and scientific research began to deal with the market.

This vision identified 7 principles that help the education process move forward from the third generation to the fourth generation, where education, scientific research and market connectivity meet the process of innovation and entrepreneurship to achieve the goals of sustainable development and Egypt's Vision 2030, achieve comprehensive development and meet the needs of the global market locally and internationally through economic, environmental and social development.

Cairo University Alignment to UN Sustainable Development Goals

The Sustainable Development Goals provide a common international framework for concrete action. Adopted in 2015 by 193 countries, the 17 goals have 169 targets and are part of the United Nations sustainable development agenda aimed at ending poverty, protecting the planet and ensuring prosperity by 2030. The European Union has committed to work towards these goals both within Europe and with its partners abroad. Universities provide cutting-edge research, high quality education, and ground-breaking innovation (Goal 4 and 9). Strong universities are an important part of civil society (Goal 16) and they are excellent promoters of global and local partnerships (Goal 17). Through their contributions to these four goals, universities facilitate the achievement of all the other goals. Notably, universities support students in developing the rigorous scientific mindset and spirit of curiosity and entrepreneurship needed to produce the solutions required for sustainable development. University researchers, teachers and students work in partnership with citizens and the private and the public sector, co-creating knowledge that can produce solutions. It is the combination of these core missions that gives universities a unique place in the common effort to achieve the SDGs. A number of universities have incorporated the SDGs into their institutional strategies, both in management and in teaching and research. Sustainable campus management has become important to many universities and is often considered part of the institution's societal responsibility. Sustainable management can include energy saving measures, resource efficiency and waste reduction, as well as the sharing of services, infrastructure and facilities with other universities or external partners. A key element in all sustainability strategies is the "whole-institution approach", meaning all parts of the university community, including external stakeholders, are involved in the efforts.

Cairo University Alignment to UN Sustainable Development Goals

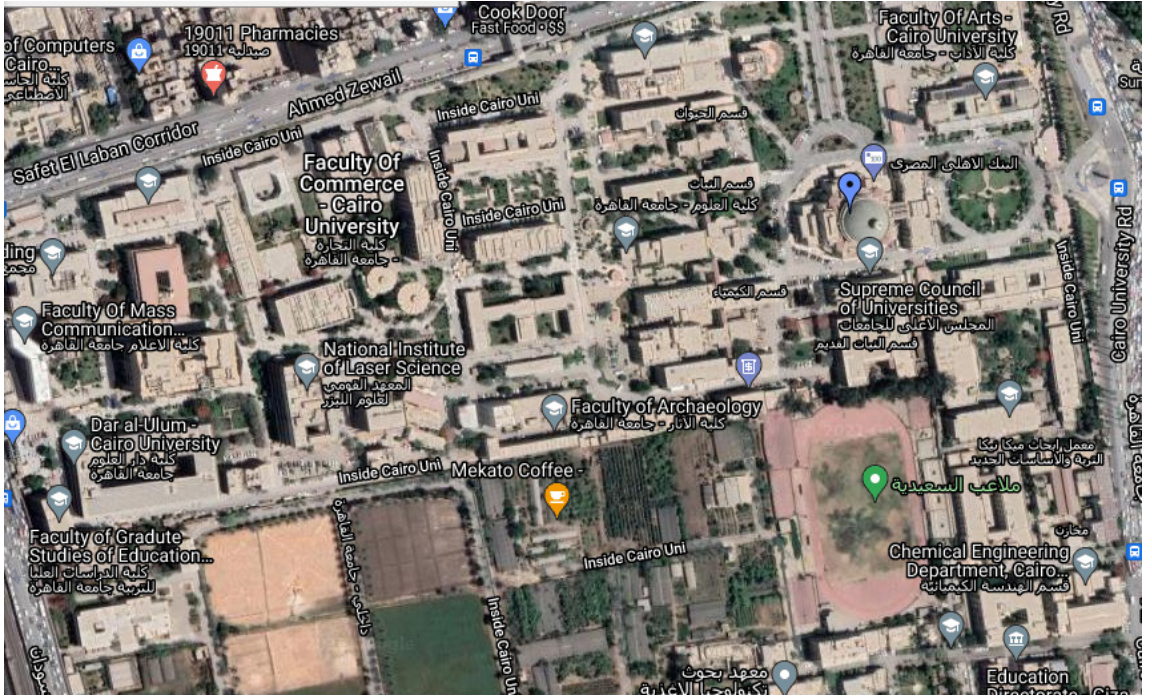
SUSTAINABLE DEVELOPMENT

GOALS

 <p>1 NO POVERTY</p>	<p>By 2030, we are committed to end poverty in all forms.</p>	 <p>10 REDUCED INEQUALITIES</p>	<p>By 2030, we are committed to empowering all people, regardless of age, gender, disability, race, origin, religion, economic or other status.</p>
 <p>2 ZERO HUNGER</p>	<p>By 2030, we are committed to ending hunger, improving nutrition, achieving food security as well as promoting sustainable agriculture</p>	 <p>11 SUSTAINABLE CITIES AND COMMUNITIES</p>	<p>By 2030, we are committed to ensure access to safe, affordable and adequate housing and basic services</p>
 <p>3 GOOD HEALTH AND WELL-BEING</p>	<p>By 2030, we are committed to ensure health life and promote wellbeing in such a way contributing Cairo University being the leader for Health and Wellbeing.</p>	 <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>	<p>By 2030, we are committed to achieve sustainable management and efficient use of natural resources through sustainable consumption and production patterns, reduction of food waste, and reduction of waste generation through prevention, reduction, recycling and reuse.</p>
 <p>4 QUALITY EDUCATION</p>	<p>By 2030, we are committed to ensuring quality, equitable and inclusive education while promoting lifelong learning opportunities for all</p>	 <p>13 CLIMATE ACTION</p>	<p>By 2030, we are committed to integrate climate protection measures into policies, strategies and planning, and enhance resilience to climate-related hazards and natural disasters</p>
 <p>5 GENDER EQUALITY</p>	<p>By 2030, we are committed to preventing violence against women, promoting gender equality, and empowering and supporting women in their family and work lives.</p>	 <p>14 LIFE BELOW WATER</p>	<p>By 2030, we are committed to promoting an important and effective strategy to end marine pollution through scientific research</p>
 <p>6 CLEAN WATER AND SANITATION</p>	<p>By 2030, we are committed to ensuring access to clean water as well as decreasing the amount of the untreated wastewater and increasing the using of the recycled water.</p>	 <p>15 LIFE ON LAND</p>	<p>By 2030, we are committed to contributing to the conservation and sustainable use of biodiversity and ecosystems as well as promoting sustainable management of all types of green spaces, ensuring the preservation of mountain ecosystems and combating desertification.</p>
 <p>7 AFFORDABLE AND CLEAN ENERGY</p>	<p>By 2030, we are committed to ensuring access to clean renewable and sustainable energy as well as encouraging investment in energy and technology infrastructure.</p>	 <p>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</p>	<p>By 2030, we are committed to reduce all forms of violence and violence-related deaths and ensure equal access to justice for all as well as build effective, accountable and transparent institutions at all levels</p>
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p>	<p>By 2030, we are committed to support sustainable economic growth productive employment and decent work for all as well as encouragement of small and medium sized projects.</p>	 <p>17 PARTNERSHIPS FOR THE GOALS</p>	<p>By 2030, we are committed to become a partner with government and civil society at all levels for implementation of all sustainability development goals.</p>
 <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	<p>By 2030, we are committed to promote sustainable manufacturing and innovation through the efficient use of resources, and the adoption of environmentally friendly technologies.</p>		

Setting and Infrastructure (SI)

Cairo University is large (207,853 students) comprehensive and urban governmental university located in Giza, Egypt.



Currently, CU has 28 faculties/institutions in diverse scientific fields such as engineering, medicine, computers and information system, pharmacy, agriculture, economics and political science, and law. CU includes 14 different campus sites with a total surface area of approximately 5,881,503.12m². The university's teaching, research, operations and community service were all assessed through the lens of sustainability.

According to the university's land records, the total area of the gardens and the streets together make up the 5,172,743.72 m² of net open space. About, 87.9 % of the campus's total area is comprised of open land. The Cairo University's initiatives to exhibit environmental leadership include landscaping as a vital component. Globally conducted studies have emphasized the critical importance of green cover, particularly parks and urban forests, in coping with and mitigating climate change. It filters out contaminated air and traps

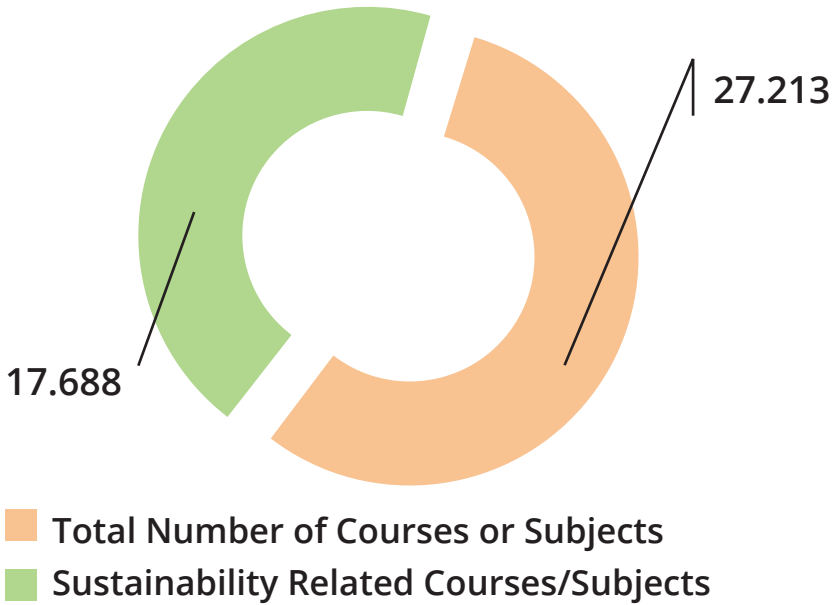
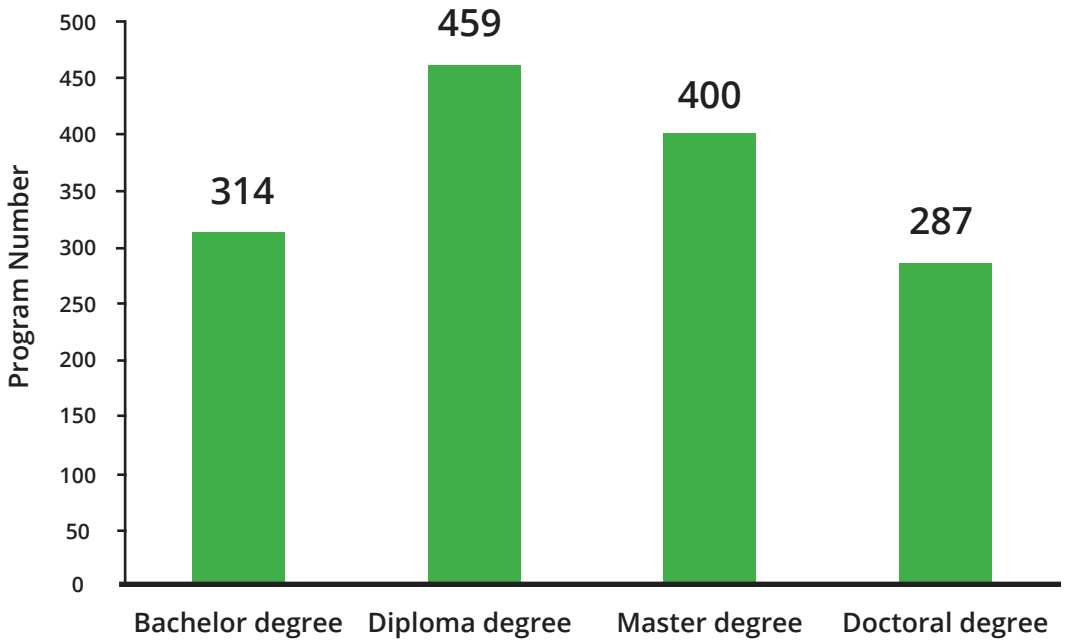
ambient CO₂. Since the establishment of Cairo University in 1908, it realized that regions of green cover must be identified, preserved, and protected because they are essential for delivering ecosystem services, boosting the wellbeing of urban inhabitants, and balancing the further development of built-up regions. The planted vegetation area of the Cairo University is 3,483,673.72 m² with percentage of 59.23 % of the total area of the campus.





Education & Research

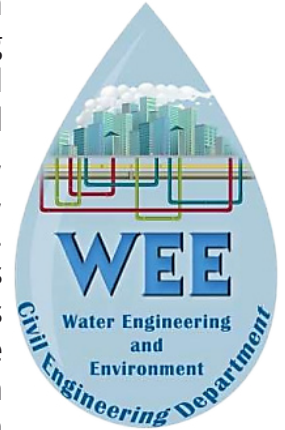
Cairo University provides around 17,688 courses/subjects connected to sustainability, accounting for %64.99 of all courses studied at Cairo University. Sustainability energy engineering and the sustainable energy engineering program are two of the most important sustainability programs that aim to offer students a broad-based qualified education that covers the important current and developing issues in sustainable energy engineering and all related fields and disciplines. In its way to consolidate its efforts to the achievement of SDG 4 concerning education, CU provides opportunities to more than 6000 international students, with total or partial financial support, including student immigrants, or students from Arabic regions and Africa. Large funding opportunities and grants were provided to CU academic staff and researchers every year to encourage them to work in the different sustainability and environment fields. Moreover, CU provides open access journal hosting services as it released the Journal of applied research (JAR) as an open-access journal. About %55 of the CU students provided an opportunity to participate in orientation events and programming that obviously embrace sustainability. In addition, CU has focused on different innovative directions of research projects in the field of environment and sustainability such as, developing systems and equipment for exploiting renewable energies, production of diesel and jet fuel from municipal sludge, integrated agro-ecological systems through smart climate applications, expected distribution in space and time of some food crops, design and coordination of the urban environment to keep pace with climate change and green marketing and taking into account environmental considerations on websites. Moreover, CU developed number of specialized research centers in the climate changes mitigation and adaption such as center of hazard mitigation, environmental studies and research, center for space science studies and consultation, center for development research and technology planning, energy research center and center of water projects designs and studies.



Academic programs

Water and Environmental Engineering Program

Cairo University, Faculty of Engineering established a new Bachelor of Science degree B.Sc. in Civil Engineering with a major emphasis on “Water Engineering and Environment”; termed below as: WEE. This program will prepare graduates for specialized training in hydrology, hydraulics, irrigation, water resources, coastal engineering, environmental and soil science among other subjects. Graduates of WEE will be well prepared to address critical environmental issues involving interconnections between the earth, water, and environment, as well as the interaction between these applied sciences and human activities. Hence, the program will help forming human resources equipped with technical capabilities to better manage the future limited water resources not only in Egypt but also in the Arab world and the Nile river basin countries. Both regions are naturally of great importance to Egypt’s national interests and prosperity



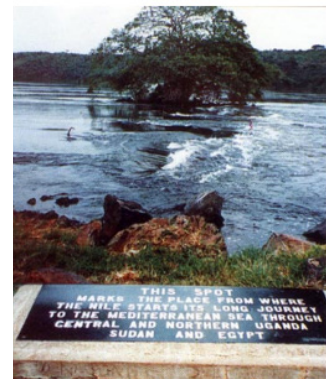
Shared Water Resources Development (SWRD) program

The SWRD has been established through close cooperation between Cairo University and the Ministry of Water Resources and Irrigation (MWRI) in Egypt. MWRI is the governmental body that authorizes water use and is responsible for management and administration of the national water resources, surface and groundwater. The ministry schedules releases from the High Aswan Dam, approves diversions from the system and has the authority to implement the natural water quality legislation.

The ministry has accumulated vast knowledge and experience to deal with the Nile River and to manage its water. The ministry today is adopting state of the art methods and technologies to manage the water resources of Egypt. Professionals from various sections within MWRI will be called upon to provide their own expertise to the SWRD students. These sections include; the Planning Sector (forecasting center), the Irrigation Department, the High Aswan Dam Authority, the Nile Water Sector, and the National Water Research Center with its 12 institutes.

SHARED WATER RESOURCES DEVELOPMENT

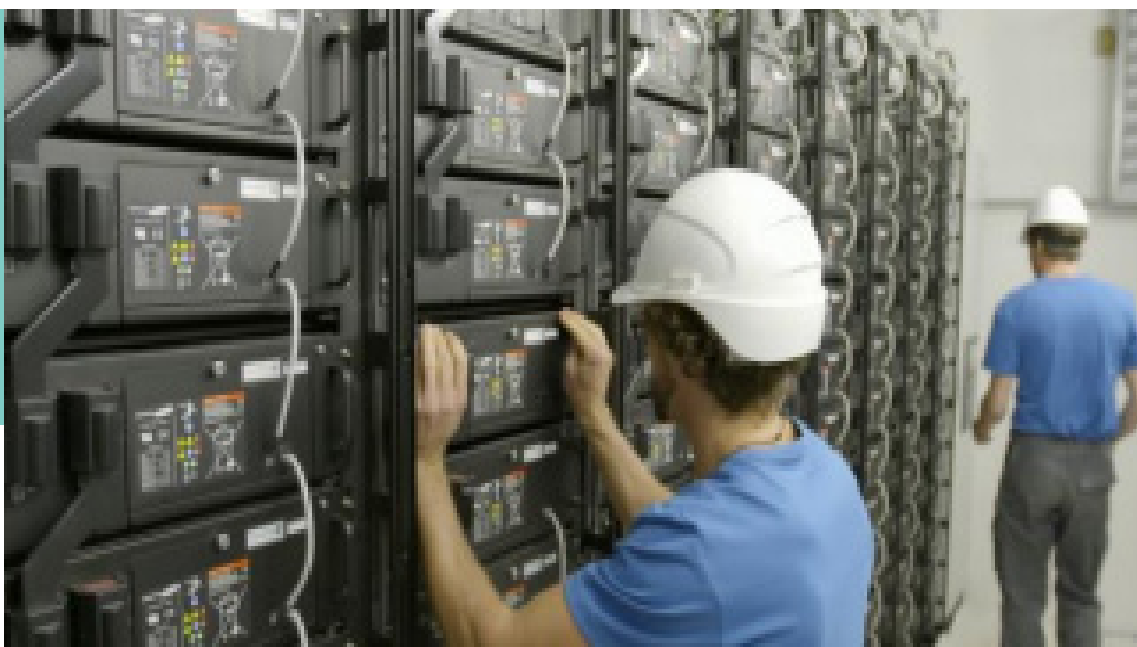
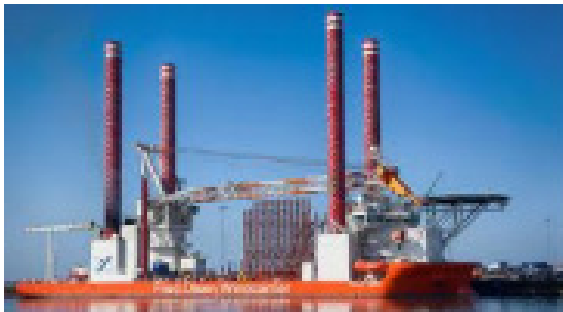
INTRODUCTION



SUSTAINABLE ENERGY ENGINEERING [SEE] Bachelor Programs

The field of Sustainable Energy Engineering is the core foundation of the immediate future growth in Egypt and surrounding region. Egypt is on its way to become the regional energy hub. This would only be possible by the hands of a new generation of qualified engineers in the fields of energy. The course provides students with the understanding of fundamental knowledge prerequisite for the practice of, or for advanced today. Also, the course aims to provide the students with broad based professional education that covers the important current and developing issues in sustainable energy engineering and all related fields and applications, This is necessary for a productive career, and for being able to search and research in the spirit of continuing education in the field of sustainable energy engineering and allied areas.

MSc in Renewable Energy and Energy Efficiency in the Middle East and North Africa (MENA) Region (REMENA)



MSc in Renewable Energy and Energy Efficiency in the Middle East and North Africa (MENA) Region (REMENA)

This master program provides young professionals with technical and managerial knowledge in the renewable energy and energy efficiency (REEE) sector and with intercultural competencies. Both aspects are equally important when taking up leadership positions in the renewable energy sector and to work effectively in the framework of international cooperation.

Countries in the Middle East and North Africa (MENA) region face a change in energy policy due to the depleting resources of fossil fuels, the rising prices, and growing demand. Sustainable energy supply will remain one of the most crucial challenges for the Arab region in the coming decades and also a main focus in developing cooperation. Experience shows that there is a lack of energy experts being familiar not only with technological aspects, but also with the culture, language and politics of Arab and Western European countries.

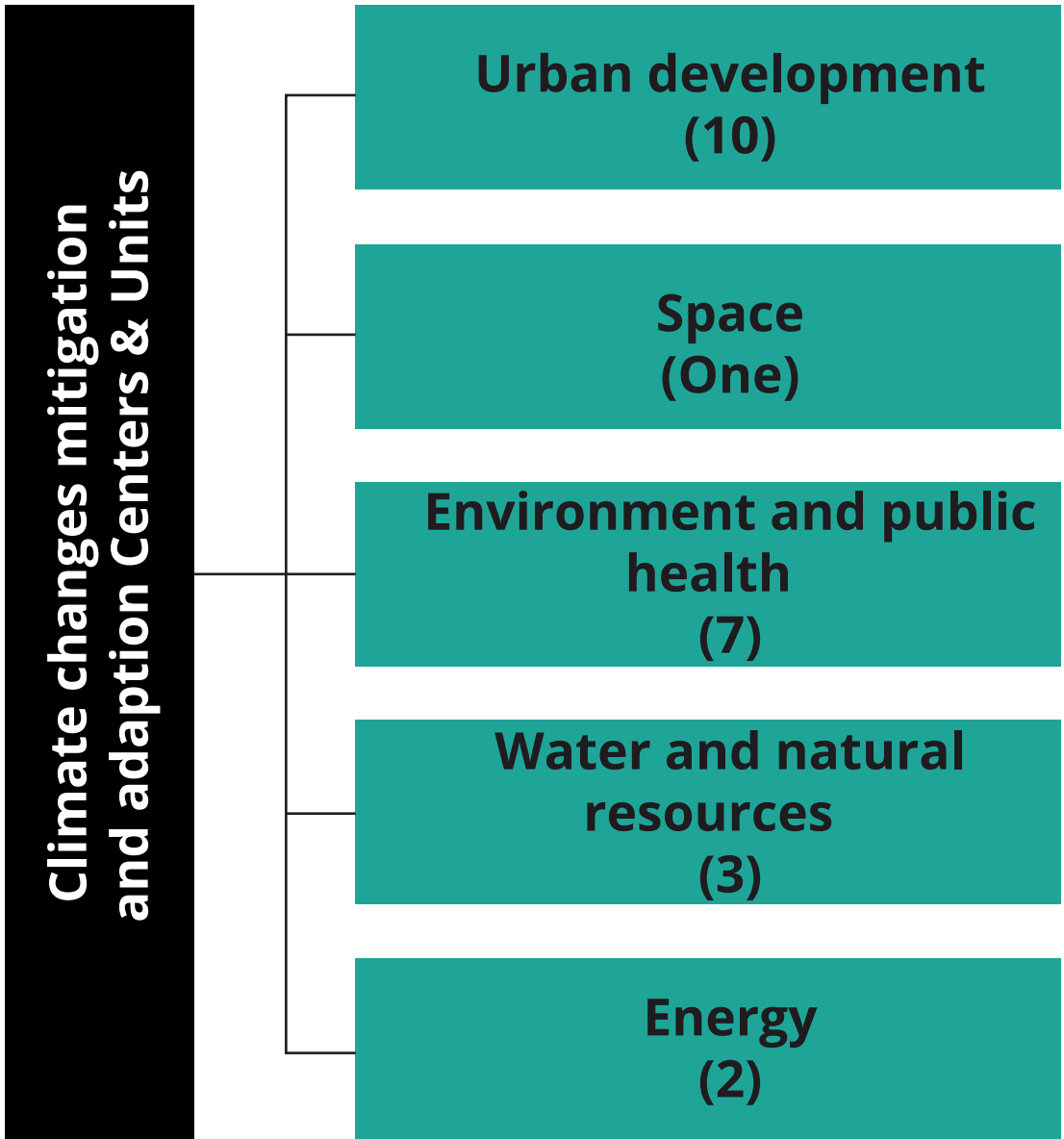
Three universities – the University of Kassel, Germany, Cairo University, Egypt, and the University of Monastir, Tunisia – in cooperation with institutions and companies in the renewable energy sector have combined their expertise to design an attractive master program to guarantee an excellent education for young experts to meet the challenges of sustainable energy supply and renewable energy and energy efficiency topics. The program is currently being extended further to diversify the study contents. An even broader range of topics is offered by REMENA University Network (RUN) partners for optional exchange semesters including the University of Sfax (US) and the

German University in Cairo (GUC).

The program is directed to young professionals with work experience and a high motivation to contribute to introducing a sustainable energy supply and to the development in the Arab region in general, which includes a keen interest in the other culture and language. Students in this program study 24 months at different locations including at least 6 months in Kassel, Germany, and at least 6 months in either Cairo or Monastir. The course includes intensive German/Arabic language courses and modules in intercultural training.



Climate Changes Mitigation and Adaption Centers & Units



Center of Hazard Mitigation, Environmental Studies and Research (CHMESR)/Cairo University

The center works in the field of environment and community development through the preparation of environmental and social impact assessment studies for industrial and non-industrial establishments. Also, **CHMESR** conducting various environmental measurements for existing facilities in accordance with Environmental Law No. 4 of 1994, as well as holding various training courses and holding conferences in relation to the environment in order to spread environmental awareness in the community.



Energy Research Center



The Energy Research Center (**ERC**) has been established in 1989 as part the national plan of the Supreme Council of Universities to promote highly independent service oriented centers. ERC is located in the Faculty of Engineering Cairo University. It has a floor area of 400 m² including three offices, two laboratories, a library and a conference room. The two laboratories include provisions for the measurements of both basic electrical and mechanical quantities besides industrial control instrumentation.

Data acquisition equipment are an integral part of these laboratories. The laboratories include training devices, such as power saver trainer and air distribution system trainer in addition to the basic energy management training system. In addition to these laboratories the center directs the coal analysis laboratory located in the Mining Department, which is equipped with an atomic absorption apparatus, a differential thermal analyzer, a thermo gravimetric analyzer and a bomb calorimeter.

USAID & Cairo University Establish Center of Excellence Agriculture

USAID has launched a five-year, 30\$ million cooperative project with Cairo University and Cornell University to create a Center of Excellence in Agriculture at Faculty of Agriculture, Cairo University.

CAIRO (28 March 2019)–Guided by the ambitious goals of Egypt Vision 2030, the United States Agency for International Development (USAID) today launched a five-year, 30\$ million cooperative project with Cairo University and Cornell University to create a Center of Excellence in Agriculture at Faculty of Agriculture, Cairo University. The Center of Excellence Agriculture (COEA) will enhance curricula at Cairo University to train the next generation of Egyptian students and equip them with the tools needed to improve agricultural production in Egypt.

«The Center of Excellence Agriculture at Cairo University will deliberately work hand-by-hand with all Faculties of Agriculture from different Universities and Research Institutes in Egypt for achieving sustainable Egypt vision for 2030,» said Naglaa Abdallah, Chief of Party (COP) of the COEA. She continued, «the collaboration with top ranked land-grant American universities in agriculture will dramatically upgrade our curricula, enhance applied research and innovation which will build bridges with stakeholders, and prepare highly qualified and market-ready graduates.”

Center of Studies and Designs for Water Projects



CWP provides engineering consultations, technical services, research and development work, and continuous engineering education to national establishment and governmental organizations. The Center offers consultation on contractual basis in engineering disciplines related to water projects.

The expertise of the Faculty professors who represents the consultants to the Center, is fully supported by the laboratory and computational facilities, Internet services, as well as libraries of the Irrigation and Hydraulics Department and the Faculty of Engineering to assist in conducting the different activities of the Center.



Unit of Ashing Carcasses & Environmental Contaminants (UACEC)



College of Veterinary Medicine

The Unit concerns with hygienic disposing of animal and poultry carcasses as well all environmental contaminants from different sources. The unit aims for the safe disposal of hazardous medical waste in a unit equipped with the latest shredding and sterilization devices, and a warehouse unit that conforms to the highest standards of quality and infection control. The unit also works to ensure the necessary procedures for the


proper separation of medical waste, such as medicines, chemicals and cytotoxic drugs, to facilitate the process of disposal of the product of shredding and sterilization. The unit also applies the best environmental practices and the latest technologies available in the management of healthcare waste, which ensures the sustainability of the system and ensures the preservation of the environment and the public health of citizens.

Faculty Research

Faculty Recognized Globally for Sustainability Research

No	Employee name	Departments that conduct sustainability research	Research interests/topics
1	Gamil Gamal	Department of Natural Resources, Faculty of African Postgraduate Studies, Cairo University, Egypt	Fields of Specialisation (i) Climate modelling and Climate Change (ii) Future climate scenarios (iii) Extreme climate indices (iv) Land - atmosphere interactions
2	A. Wafiq	Chemical Engineering Department, Faculty of Engineering, Cairo University, Egypt	Area of Research: Biomass Thermochemical Conversion Coal Gasification Pig Iron Production
3	Ashraf Suloma	Animal Production Department, Faculty of Agriculture, Cairo University,	Research Interests Aquaculture, Fish Nutrition, Aquaculture-Agriculture Integrated System. More specifically: <ul style="list-style-type: none"> • Nutrients requirements and feeding regimes for freshwater (Tilapia. Carp, African catfish, mullet, freshwater shrimp) and marine temperate and tropical fish (coral reef fishes, milkfish, rabbitfish, seabass, seabream). • Feed additive. • Desert aquaculture. • Rice-fish culture - Biofloc- periphyton • The role of aquaculture in improving food security.
4	Prof. Ahmad K. Hegazy	Department of Botany and Microbiology, Faculty of Science, Cairo University	Macro Plant Ecology/ Population and Community Ecology. Special interest in Applied Ecology and Conservation of Biodiversity, Bioremediation and Environmental Biotechnology.

No	Employee name	Departments that conduct sustainability research	Research interests/topics
5	Dr Safaa Ghoneim	Faculty of Urban Planning, Cairo University	Expert of Environmental Planning and GIS & Remote Sensing
6	Tariq Ismail	Cairo University, Faculty of Commerce	Social responsibility and sustainable development
7	Professor Dr. Mohsen Abounaga	Faculty of Engineering, Cairo University	experience in higher education, government, senior management, and consultancy in Sustainable Development and Sustainable Energy, including energy efficiency and renewable energy, energy policy development, and green cities as well as climate change adaptation and academic positions.
8	Chakinaz El Sheltawi	Faculty of Engineering, Cairo University	Consultant at Center for Environmental Research and Studies
9	Prof.Dr. Ahmad Abdeen	Faculty of Engineering, Cairo University	Environmental Planning & Architecture Section
10	Dr. Gamal Hosny AL-Samra	Professor of OEM at Faculty of Medicine – Cairo University	Occupational Diseases. <ul style="list-style-type: none"> o Environmental Health. o Developing countries' environmental and health problems. o Ergonomics. o Air pollution.
11	Tarek Abou El Seoud	Department of Environmental Planning and Infrastructure Faculty of Urban and Regional Planning, Cairo University	He is major specialization in geoinformatics systems, econometrics and spatial, mathematical modelling and applied statistics for urban planning

No	Employee name	Departments that conduct sustainability research	Research interests/topics
12	Dr. Gehad A. Abo El-Ata	Occupational and Environmental Medicine at Cairo University Faculty of Medicine	He has extensive expertise in environmental waste management concerns, including design, implementation on integrated solid waste management systems and hazardous waste management as a part of healthcare waste management.
13	Hamed Abdelreheem Ead	Department of chemistry Faculty of Science, Cairo University	He has experience in cyclic economy and green chemistry and sustainability
14	Hala Abou-Ali	Faculty of Economics and Political Science, Cairo University	<p>Her main areas of research are applied microeconomics, environmental economics, and climate change. She has accumulated experience in the economic value and modeling of environmental resources in developing countries, with a particular focus on water and air pollution and agricultural land degradation.</p>  <p>حاضنة أعمال كلية الاقتصاد والعلوم السياسية FEPS BUSINESS INCUBATOR</p>

FEBS Business Incubator

Hub for innovative startups

Faculty of Economics and Political Science Business Incubator, FEPS BI, is a hub for innovative startups. As it provides them with outstanding entrepreneurial knowledge based on its unique scientific methodology. In addition to this, the exposure to a diversified network of mentors and advisors with eminent professional, practical, and academic experience. This accumulated knowledge enables FEPS BI to provide a distinguished entrepreneurial experience for all youth in Egypt.

FEPS BI through its diversified services aims to the promotion and enhancement of the Sustainable Development Goals adopted by the United Nations in 2015 and which are incorporated in the Egyptian Development Strategy 2030. The adopted goals include and not limited to; Decent Work and Economic Growth, Education, Good Health and Well-being, Gender Equality and Women Empowerment, Sustainable Cities, and Renewable Energy. Through the fulfilling of following goals:

- Empowering youth with innovative startups ideas that aim to achieving the Sustainable Development Goals.
- Contribute to the reduction of unemployment rates, and raise the rate of employment among youth.
- Raise Egyptian youth awareness about entrepreneurship.
- Create an Entrepreneurial mindset for Egyptian youth.
- Commercialization of the academic researches that help in enhancing the sustainable development goals.

46

Incubated Startups

66

Workshops

36

Success Stories

6000+

Attendees



Green Tourism Initiative:

Under the umbrella of the Sustainable Innovation Lab project and within the framework of the Green Economy Incubation Program implemented by the Business Incubator of the Faculty of Economics and Political Science in cooperation with the National Institute for Governance and Sustainable Development,

The «Green Tourism» initiative is being developed, which is mainly based on organizing tourist trips to archaeological sites and tourist attractions, while reducing the environmental impacts of these trips, which cause an increase in pollution rates and damage ecologically the landmarks of the region, or may cause negative effects on the environment or impact.

EFIKA

Solar Street Lightning Cleaning Robot



Solar Street Lightning Cleaning robot

ESSI

Solar panel efficiency will be decreased greatly if the dust, sand, bird droppings, or other particles have accumulated on the panel. Our SSL cleaning robot is an autonomous robot that is installed on the solar panel to reduce the running cost of cleaning the solar panel and keep the system efficiency maximized

Tests

- 1- It has been tested for different types of sands, natural dust, construction sand, desert sand, and wet sand. It has efficiently cleaned all these types of sands without even scratching the panel.
- 2- The robot has witnessed accelerated test by doing continuous cycles and it has done about 8000

Solar Street Lightning Cleaning Robot

Assess Project



Assess



Assess, is the first ed-tech startup tackling the development of children aged 0- 5. At Assess, we support new parents by creating personalized, easy-to-implement early childhood development programs that are developed by experts using evidence-based methods.

أسيس هي أول تطبيق عربي في مجال التعليم الإلكتروني يعالج الأطفال من الولادة حتى سن خمس سنوات. أسيس يساعد الآباء والأمهات الجدد في تربية وتربية أطفالهم من خلال خطة تدريبية متكاملة وسهلة التطبيق لتأهيلهم اجتماعيا وعاطفيا وإدراكيا ولغويا.

Samira Negm
Founder

samira@assesskids.com

Seif Abozeid
Co- Founder

seif@assesskids.com



<http://assesskids.com/>



Ecovl Project



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أول الطريق



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ECOVL is an innovative online platform that aims to satisfy consumers' desire to shop from outside their country, by harnessing all the world's markets, merchants and platforms within their reach, by completely raising the hassles of customs transactions on them, at a lower price that reaches 70% of the cost, With a local guarantee on products for a period of up to 24 months, and the ability to pay in instalments through many of our bank partners, the delivery period of the order from the moment of payment is a maximum of 21 working days.

ECOVL, the world's products at your fingertips.

إيكوفل هي منصة إلكترونية إبداعية على الإنترنت، تهدف إلى إشباع رغبة المستهلكين في التسوق من خارج دولتهم، عن طريق تسخير جميع أسواق وتجار ومنصات دول العالم بين متناول أيديهم، وذلك برفع أعباء التعاملات الجمركية عنهم كاملة، وبسعر أقل يصل إلى توفير 70% من التكلفة، مع ضمان محلي على المنتجات لمدة تصل إلى 24 شهراً، وإمكانية الدفع بالتقسيط عبر العديد من شركائنا من البنوك، لتكون فترة تسليم الطلب من لحظة الدفع هي 21 يوم عمل بحد أقصى. "إيكوفل، منتجات العالم بين إيديك"

Islam Abdelaziz
Founder
islam.abdelaziz@icloud.com


Mohamed El Sharkawy
Co- Founder
mohammed.elsharkawy96@gmail.com

<https://ecovl.com/>

<https://www.facebook.com/EcovlEgypt>


أول الطريق


Eman Soliman Leathers



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**Eman Soliman
Leathers**






At Eman Soliman's Leather, we endeavor to convert ideas into exclusive and unique hand-crafted products. Our craftsmen with individual industry experience are experts in handling any kind of leather

We pride ourselves in partnering with customer needs to provide them with a state-of-the-art manufacturing facility.

إيمان سليمان للمنتجات الجلدية، نسعى جاهدين لتحويل الأفكار إلى منتجات يدوية مصنوعة وفريدة من نوعها الجاهزة لدينا ذوو الخبرة الصناعية الفردية هم خبراء في التعامل مع أي نوع من الجلود. نحن نفتخر بالتمسك بالشراكة مع احتياجات العملاء لتزويدهم بأحدث تقنيات التصنيع.

Eman Soliman
Founder


heads@emansoliman.com




www.emansoliman.com

Ahmed Amin
Co- Founder

ahmed.amin@emansoliman.com



<https://www.facebook.com/emansolimanleathers>



Tawarae












Tawarae is a medical support solution that provides home care and emergency support through a simple and easy-to-use mobile app.

The way Tawarae works is that the user in need for help presses a simple SOS button for the app to immediately send a MSR (Medical Support Request) to all the medical centers, hospitals and clinics within 10 miles of the user's location, so that the nearest ready medical center can accept the request and move towards the user's location. Meanwhile the user can contact our team of medical professionals through the pop-up contact button on the app, and our team will assist and comfort the user until the help arrives.

This smart way of sending out the MSRs will save time for the person in need and will in many cases, save lives.





Tawarae حل للدعم الطبي يوفر الرعاية المنزلية والدعم الطارئ من خلال تطبيق متفعل بسيط وسهل الاستخدام. ويوفر التطبيق طريقة بديلة أسرع بكثير للحصول على المساعدة الطبية، للطريقة القديمة للبحث في المستشفيات والعيادات، ويحجز موعداً وسافراً هناك للمساعدة. إن الطريقة التي يعمل بها تارواي هي أن المستخدم المحتاج للمساعدة يضغط زرًا بسيطاً من أجل تطبيق نظام رصد الضغط فوراً لإرسال جهاز الرصد السريع (طلب الدعم الطبي) إلى جميع المراكز الطبية والمستشفيات والعيادات في غضون عشرة أميال من موقع المستخدم، حتى يتسنى لأقرب مركز طبي جاهز قبول الطلب والتحرك نحو موقع المستخدم وفي الوقت نفسه يستطيع المستخدم الاتصال بفرقنا من المهنيين الطبيين من خلال زر الاتصال على التطبيق، وفرقنا سيساعد ويراحة المستخدم حتى تصل المساعدة. وهذه الطريقة الذكية لإرسال تقارير الرصد الموحد ستوفر الوقت للشخص المحتاج وستنقذ الأرواح في حالات كثيرة.

Ahmed Mohsen Mohamed
Founder
dr.mo7sen.21@gmail.com
<https://www.tawarae.com/>


Ahmed Adel
Co- Founder
ahmed.amin@emansoliman.com
<https://www.facebook.com/tawaraeapp>



DemoDay

Mr. Mechanic




Mr. Mechanic




Mr. Mechanic is a mobile application that connects car owners with car maintenance and washing services. It recognizes the hassle that car owners face when their cars break down or when they wash their cars. So that the app model allows a broader network of service providers that can offer faster and cost-effective services, unlike the competitors. The app operations will begin in August 2021.

The business hopes to have gross sales of 0.5M LE by the end of the first year of operations, and 1.7M LE by the end of the second year. To achieve this goal, Mr. Mechanic plans on offering car agencies as maintenance providers. In addition to dry foam car wash at home, and point system as a customer loyalty program.

مستر ميكانيك هو تطبيق محمول يربط ملاك السيارات بمقدمي خدمات صيانة وغسيل السيارات. نجد أنه كثيرا ما يعاني ملاك السيارات من المتاعب عند التعطل المفاجئ أو غسيل سيارتهم. لذلك يتيح هذا النموذج شبكة أوسع من مقدمي الخدمات الذين يمكنهم تقديم الخدمة بشكل أسرع وفعال من حيث التكلفة على عكس المنافسين. وستقدم خدمات التطبيق في أغسطس 2021.

تطمح الشركة لتحقيق إجمالي مبيعات بقيمة ٠.٥ مليون جنيه في العام الأول من التشغيل و ١.٧ مليون في العام الثاني. ولتحقيق هذا الهدف فإن مستر ميكانيك يخطط لتقديم خدمة الصيانة في التوكيل بالإضافة إلى غسل السيارات بدون مياه في المنازل. ونظام النقاط ضمن برنامج لضمان ولاء العملاء.

Mohamed shaaban Sultan
Founder
mohamed.sultan.agr@gmail.com

Abdelrahman Mohamed Mahmoud
Co- Founder
abdelrahman.soliman.2097@gmail.com



Mortagal



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BUSINESS Incubator

Mortagal for Consultancy & Training in the art of Theater
We are a team of trainers specialized in performing and visual arts. We actively work on merging these arts to innovate new types of art. We are specialized in arts program design and implementation within Cairo as well as other governorates. Our programs aim at developing the capacities of the participants in terms of artistic skills, creativity, and life skills. We offer our consultancy services to national and international institutions, we organize workshops for art professionals to learn internationally accredited theater techniques, and also help those who are interested in art find their way into self exploration and expression.

شركة مرتجل للتدريب والاستشارات في فنون المسرح هي شركة تضم مجموعة من محبين الفنون الأدائية والبصرية، تعمل على دمج هذه الفنون لابتكار أنواع فنون جديدة، متخصصون في تصميم وتنفيذ البرامج الفنية في مدن القاهرة المختلفة والمحافظات الأخرى بهدف إكساب المشاركين مهارات فنية وحياتية إجتماعية، من خلال تقديم الاستشارات للمؤسسات المحلية والدولية، وإقامة ورش فنية لمحترفي الفنون المسرحية للتدريب وتعلم تقنيات مسرحية حسدية وعالمية، ونساعد الفهواه على إيجاد الطريقة المناسبة للتعبير عن النفس واكتشاف الذات من جديد.

Mohamed Farouk
Founder
0007farouk@gmail.com

Mostafa Zein
Co- Founder
zein.mortagal@gmail.com

<https://www.facebook.com/Mortagalteam.7>

أول الطريق

Farahy





Farahy

FARAHY



Farahy is a digital platform that facilitates the wedding planning process by aggregating all the wedding suppliers and details in one place.

At Farahy, we also pride ourselves in being the first wedding consultant in Egypt. We'll perfectly plan everything on your behalf starting from choosing your bridal gown until your honeymoon.

We believe that the wedding planning journey should be an enjoyable stress-free experience and so we aim to be the one-stop-hub for all your wedding needs.

فرحى هي منصة رقمية تسرع على المقبلين على الزواج التخطيط ليوم الزفاف عن طريق تجميع كل مقدمي الخدمة والموردين في مكان واحد وتقديم كل الخدمات الإضافية المتعلقة بالأفراح.

بالإضافة إلى ذلك، نفخر في فرحى بأننا أول مساعد خاص/ استشاري في مصر يستطيع ان يخطط لك كل شيء بشكل مثالي بدءاً من اختيار فستان الزفاف حتى شهر العسل.

نحن نؤمن بأن عملية التخطيط لحفل الزفاف يجب أن تكون ممتعة و كالية من التوتر ولهذا نعدكم بتجربة فريدة.

Nadine Farrag
Founder
nadine@farahy.net

Aleya Shaalan
Co- Founder
aleyshaalan@farahy.net

 farahy.net

 facebook.com/farahy.net



Water Management

in Cairo University

Water management is a global subject that will only grow in importance in the coming years. Water, fortunately, is a renewable resource that can be circularized and managed appropriately through policies that emphasize adequate resource allocation, conservation, usage efficiency, treatment, and education. The majority of household water consumption on our campus is accounted for by about 207.83 students and 14.518 academic and administrative staff. This includes drinking water, toilet flushing, washing, and laboratory water. Aside from the building, the campus vegetation, experimental farms and greenhouses farms also utilize a lot of water. Water management has received a lot of attention at CU, not just because of demand difficulties, but also because of climatic and geographical reasons. Cairo University water sources include groundwater and Nile River.

Cairo University has implemented various measures to optimize water usage on its campus. Great amounts of water can be easily saved by intentionally adopting water-saving behaviors and installing water-saving appliances. Generally, CU realized the significance of water management in sustainable development. Firstly, CU installed a new drinking and fire water network for controlling the water pressures to suit the application. Moreover, the green office managers were asked to proceed to the essential steps toward rationalization by hastening the repair of damaged sanitary equipment and creating posters to inform the university's affiliates, including students, administrators, and faculty participants, on the value of rationalizing consumption and the prompt reporting of leaks. Continuous replacement of old ordinary taps with newer ones with sensor to reduce water-loss was new achievement facilitated and supervised by sustainability office as shown in the following figure.



Electronic sensor taps for water consumption reduction

In addition, water-saving cutting technology implemented on the nozzles of currently-used faucets without changing the old ones. To efficiently manage the amount of water consumed, CU has inclined to cultivate drought-tolerant plants like palms (date palms and prichardia) and trees (Ficus netda, glass mattress, conocarpus, tamarind, prosops, broad pepper, carob, cypress, lemon cypress, thin pepper, decrostaches, sycamore, bell, etc.. Furthermore, the engineering management at CU developed a water-saving irrigation system that uses digital monitoring devices for irrigation of all vegetation areas from the ground water.

Wastewater Treatment

Wastewater treatment unit emphasizes, on sustainability concerns through the rescue, recycle energy and nutrients from wastewater. Exploration and production of new chemicals contaminates considerable wastewater discharged from offshore oil rigs; as a first step, physical treatment methods as well as electrolysis were deployed. The membrane bioreactor is a technology that has newly been applied to wastewater treatment for the goal of reusing treated water and improving the sustainability of the water resources.

Cairo University received a Japanese delegation from Nagoya and Kyoto Universities, to discuss the mechanisms for implementing the joint applied research project presented by Cairo University to treat wastewater and generate biofuel energy from human and agricultural waste within the framework of localizing decentralized tertiary treatment technology in Egypt. Wastewater of CU collected from different campus zone is treated according to standard and polices of environment ministry. The treated water is used for watering gardens in the communal areas of the university. Many research projects focused on wastewater treatment were hosted by Cairo University.

Water recycling enables the reuse of purified water for useful purposes such as agricultural irrigation, toilet flushing, and industrial processes. This minimizes the energy necessary to transport water over longer distances and the risk of soil subsidence induced by groundwater pumping. To achieve the goal of full recycling of water, CU established two units for the treatment of gray water. In a sustainable view, CU also launched the center for studies and designs for water projects (C.W.P), which aims to enhance the quality of research and design work related to water projects inside and outside the campus. Cairo University also encouraged many specialized research projects in the field of water rationalization such as wastewater and biofuel generation, maximizing the water conservation capacity of sandy soil and increasing the

efficiency of its use in some biological ways and green Shine is a waterless car wash product and service that saves about %99 of wasted water. Cairo University also developed a novel water sustainability based program named Shared Water Resources Development (SWRD) that has been established through close cooperation between Cairo University and the Ministry of Water Resources and Irrigation (MWRI) in Egypt. MWRI is the governmental body that authorizes water use and is responsible for management and administration of the national water resources, surface and groundwater.

The ministry schedules releases from the High Aswan Dam, approves diversions from the system and has the authority to implement the natural water quality legislation. The ministry has accumulated vast knowledge and experience to deal with the Nile River and to manage its water. The ministry today is adopting state of the art methods and technologies to manage the water resources of Egypt. Professionals from various sections within MWRI will be called upon to provide their own expertise to the students. These sections comprise; the Planning Sector (forecasting center), the Irrigation Department, the High Aswan Dam Authority, the Nile Water Sector, and the National Water Research Center with its 12 institutes.



Cairo University owns a pilot wastewater treatment plant for the safe disposal of wastewater



Cairo University's participation in the Cairo International Innovation Exhibition by new experimental wastewater treatment unit

Waste Managing and Recycling in Cairo University

Waste managing and recycling belongs to 12th sustainable development goal which ensure sustainable intake and usage patterns. It is considered key to sustain the livelihoods of current and future generations. Resources in our planet are decreasing with time, but populations are continuing to grow. If the worldwide population reaches more than 9 billion by 2050, the equivalent of almost three planets will be required to provide the natural resources needed to sustain current lifestyles.

1- Reduce

Minimize the amount of waste produced

2- Reuse

Use material more than once

3- Recycle

Use material to make new products

4- Recover

Recover energy and metals from waste

5- Disposal

Safe disposal of waste to landfill



CU is currently making huge efforts to apply applicable strategy which is based on decrease, reduce and reuse as shown in the following figure

3R Program for University Waste (Cairo University, Egypt)

Reduce



Reuse



Recycle



Waste management is becoming increasingly challenging in urban areas due to a growing population and higher rates of waste disposal. The amount of waste generated is also increasing due to human activities in various sectors. It is projected that annual waste generation will significantly rise by 2050, particularly in developing countries where inadequate waste management disproportionately affects urban poor communities. This has led to a global interest in innovative approaches like zero-waste and the circular economy. The zero-waste concept challenges the notion that waste is a useless byproduct and instead considers it as a resource that can be repurposed. In many countries, some public universities have implemented zero-waste initiatives as part of their sustainability programs. The waste management unit is currently the responsible

unit of delivering these separated wastes from each faculty every week on Thursday and sells it to the dealers to be recycled in usable form. Several paths can be taken in the creation of this path to ensure that universities are administered sustainably.

CU was one of those first organizations in Egypt to develop a structured Zero Waste program. The zero-waste technique for implementing a circular economy program as a way to accelerate the Green Campus process. Programs to reduce usage of paper such as approved usage of an e-documentation system instead of paper as well as using the electronic system to communicate; announce faculty members, students and employees in more than %90 of the university's faculties. CU campus has already applied several programs to reuse paper and plastic inside campus: such as reusable cups and printing on both sides and using of reusable bags instead of plastics. Food wastes is reused in special machines to obtain bird's food; however, plastic and paper wastes is collected and is sold to echo-conserve certified company for waste's transfer and treatment. Organic waste accounts for 19.56 % of all university garbage (with Food waste %45). Recycling of waste is one of Cairo university goals to mitigate with the Egyptian strategy; it is performed separately in every department and faculty. Separation of plastic, paper and food using trash's boxes is being done from the beginning. Food trash is reused into food for birds using special equipment Plastic and paper rubbish is collected and sold to an echo-conserve-certified company for waste transfer and treatment. Other uncategorized Waste types, that cannot be recycled, are deposited in their form under dry conditions and transferred to incinerator.

Cairo University Efforts in Energy Management

The increase in demand for energy has directly resulted in the depletion of fossil fuel supplies such as petroleum, natural gas, and coal throughout the years. To address the issues highlighted before, power networks around the world incorporate renewable energy resources such as solar cells, biomass energy, and wind energy. Due to multifaceted impact of energy consumption on the environment, financial operations, and social activities of every campus, energy consumption is a primary topic of campus research. Similarly, greenhouse gas emissions are important because of their impact on global air quality, health problems, and influences global warming. In this setting, most campus activity necessitates the use of electrical energy, such as lighting and refrigeration, and is intrinsically tied to greenhouse gas emissions and the usage of fossil fuels. As a result, it is critical to run campus buildings and equipment in an energy-efficient manner and to implement cost-cutting measures whenever possible in order to reduce both energy consumption and associated greenhouse gas releases. In conjunction with the report of, CU has been created deploying new technologies that save energy and could aid its efforts to reduce their carbon footprint, also tackling renewable issues in courses. Cairo University has installed solar power plants on the roofs of many buildings, replaced about of more than %82 of the external glowing lamps of all departments and lampposts with LEDs.

Renewable Energy Sources in Campus

NO	Name	Place	Number of panels	Electricity production capacity (kilowatt)
1	Dar Al Uloom College Building	Main campus	1173	350
2	Arab Council building	University City	408	120
3	Building (3) in the university city	University City	136	40
4	Building (4) in the university city	University City	136	40
5	Building (5) in the university city	University City	136	40
6	Building (6) in the university city	University City	136	40
7	Building (7) in the university city	University City	136	40
8	Building (8) in the university city	University City	136	40
9	Building (9) in the university city	University City	136	40
10	Building (10) in the university city	University City	136	40
11	Building (11) in the university city	University City	102	30
12	Building (12) in the university city	University City	102	30
13	Building (13) in the university city	University City	102	30
14	Building (4) in the university city	University City	102	30
15	Faculty of Engineering	Outside the main campus	120	30
Total			3197	940



Solar Power Plants on the Roofs of CU- Buildings



Example of CU Building with LEDs Lamps

In addition, CU has adopted a project to produce a "solar heater" for Cairo engineering students at a low cost and with distinctive capabilities. The university is now preparing to install some of these solar heaters to provide hot water to all campus restaurants and student housing. Furthermore, CU is activating the pilot plant project for the production of electrical energy at the Faculty of Engineering (Fig. 9). An innovation attempt for cooking food using solar energy was developed by CU while encouraging an engineering student project about using solar panels to cook food. Cairo University realized that the field of Sustainable Energy Engineering is the core foundation of the immediate future growth in Egypt and surrounding region. Egypt is proceeding to become the regional energy hub. This may only be promising by the aid of a new generation of skilled engineers in the fields of energy. Thereby, Cairo University developed a novel energy sustainability based program named sustainable energy engineering (SEE). This course provides students with the understanding of fundamental knowledge prerequisite for the practice of, or for advanced today. Also, the course aims to provide the students with broad based professional education that covers the important current and developing issues in sustainable energy engineering and all related fields and applications, This is necessary for a productive career, and for being able to search and research in the spirit of continuing education in the field of sustainable energy engineering and allied areas.



Pilot Plant Project for the Production of Electrical Energy at the Faculty of Engineering



Solar Panels to Cook Food...a Student Project

CAIRO UNIVERSITY EFFORTS IN TRANSPORTATION MANAGEMENT

Egypt is suffering “Moderate” air quality with a US AQI reading of 63. This is according to figures suggested by the World Health Organisation (WHO). For the months of May and June, Cairo attained the WHO target figure of less than 10 µg/m³. Vehicle pollutants harm our health and contain greenhouse gases that cause climate change. Burning gasoline and diesel fuel creates harmful byproducts like nitrogen dioxide, carbon monoxide, hydrocarbons, benzene, and formaldehyde. In addition, vehicles emit carbon dioxide, the most common human-caused greenhouse gas. Transportation management in Cairo University represents one of important challenges to ensure lower emission of gasses as well as comfort means of transport. Cairo University is characterized by an excellent and strategic location as well as huge efforts in supporting initiatives to decrease private vehicles such as many public transportations means, including its own metro station, which has a gate leading directly to the main campus as well as special stations for student near gat. Cairo University offers different cars for research as well as specialized cars for examination services exterior to the campus. Cairo University provides a mass transportation policy by providing 49 buses, operating on 49 lines and providing safe and comfortable means of transportation for around 1,553 employees and faculty members. It is worthy of mention that each bus carries approximately 28 people. Cairo University is keen on preventing the hindrance of student movement, streamlining the work of administrative security, and reducing the movement of cars heading to the campus. As such, only cars with a university permit are allowed entry to campus. Many plans are being applied to increase electric cars as an alternative inside the campus Cairo University has also been a pioneer in electric vehicle development and research into new technology to some extent within New Cairo City, hosting

the first electric vehicle rally to boost the local electric vehicle sector and promote clean technologies. Cairo University is now encouraging ecofriendly means of transport such as bicycles, more parking areas have been settled for bicycle on campus. Almost annually, a cycling marathon in the playground inside the university campus, celebrating the start of the new academic year with the participation of many students belongs to CU.



Bike parking area inside campus (Cairo University, Egypt)

1- The sustainable testing laboratory

▀ SUSTAINABILITY COMMUNITY SERVICES PROJECT ORGANIZED AND/OR INVOLVING STUDENTS

The sustainable testing laboratory is in partnership between the Business Incubator of the Faculty of Economics and the National Institute for Governance and Sustainable Development, the training arm of the Ministry of Planning and Economic Development. It is the first of its kind in Egypt and the Middle East, and the laboratory incubates innovations and emerging projects that work to achieve sustainable development goals, as well as providing technical and technical support by providing laboratories to manufacture prototypes for these projects and help them develop those models using manufacturing technology and the concept of the circular economy. Economy, where this system is based on supporting the industrial system through an economic system based on a renewable industrial system and based on recycling and reuse. The laboratory also works to contribute to the transfer of scientific research outputs carried out by young researchers, including masters and doctoral researchers, into emerging projects operating in the market. The laboratory consists of four innovation laboratories: the green economy, the digital economy, the creative industries economy, and government innovations

2- Small and Medium Enterprise Project



1- Entrepreneurship, stock market & money market project



2- Digital Mechanization Model Project



2- Project of the full vision model to clarify the requirements of the labor market from all directions



Design of a Quad Copter for Date Palm Pollination



Using Modern Applications to Detect Red Palm Weevil



فريق العمل من الطلاب

محمد محمد حسن / مي مصطفى

سلمي محمود / رضوى محيي الدين / مني ياسر.

النتائج:

تم اختبار الجهاز معملياً بحيث يتمكن من رصد الأصوات عن طريق الموجات الصوتية ويمكن إستخدامها في رصد حركة اليرقة والسوسة.

التوصيات:

يمكن إستخدام الجهاز في رصد حركة يرقة وسوسة النخيل الحمراء وتحديد موقعها داخل النخلة.



آلية عمل الجهاز:

- يتم تمرير الجهاز على جذع النخلة فيقوم المستشعر برصد صوت الحشرة داخل الجذع ويعطي إشارة إذا كانت الحشرة موجودة وتقوم بقرض الجذع من الداخل .

- فبذلك يتم إكتشاف الحشرة مبكراً ، تحدد الطنقة المظلمة .

أهمية النخيل:

- تعد مصدر للتغذية بالعناصر الغذائية الهامة.
- تعتبر مصر هي أولى الدول العربية المنتجة لنخيل البلح آخر ثلاث أعوام على التوالي.
- وفي إفريقيا نحو 35% من إنتاج التمورر وذلك في عام 2002م.



- تتعرض شجرة النخيل إلى العديد من الأكلات الحشرية والمرضية ، أهم هذه الأكلات هي (سوسة النخيل الحمراء) فهي تتسبب في لقان الأشجار المصدلة وإحداث خسائر فادحة للمحصول ، وتقدر هذه الخسائر بنحو 30% من الإنتاج الكلي .

- لسنتين الأشجار يتم قطعها بسبب الإصابة الشديدة ، لذا يجب الكشف المبكر

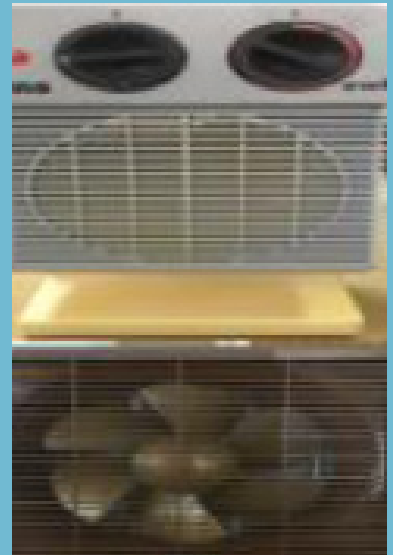
Design of a Machine System for Harvesting Date Palms



Maximizing the Ability of Sandy Soil to Conserve Water & Increasing the Efficiency of Using it in Some Biological Ways



An Innovative Drying System Using Semi-Transparent Solar Panels





Production of Organic Fertilizer Using Worms

Biofloc Fish Farming Project



Sustainability Programs

with International Collaborations

1- A joint cooperation protocol between the Faculty of Regional and Urban Planning at Cairo University and the International Environmental Systems Research Institute (ESRI), represented by ESRI-NORTH AFRICA.

Under this protocol, technical support will be provided to all faculties and students of Cairo University by providing free copies of the company's latest ARCGIS PRO programs through joint coordination with the Faculty of Regional and Urban Planning, in addition to providing a group of internationally accredited professional diplomas from ESRI and Cairo University, which will be announced through the College of Regional and Urban Planning



2- Cairo University signs a cooperation protocol for dual degrees with the University of East London in Britain. Dr. Mohamed Othman Elkhosht, President of Cairo University, and Dr. Hassan Abdullah, Academic President of the University of East London, signed a joint cooperation protocol in the field of establishing dual academic degrees, within the framework of the National Strategy for Higher Education and Scientific Research 2030, and in light of Cairo University's keenness to deepen its international role and continue... Holding partnerships and dual degrees with prestigious international universities to teach at Cairo International University.



3- Cairo University has succeeded in concluding many international agreements and alliances with major international universities, some of which are ranked among the top 50 universities in the world, amounting to about 200 agreements, protocols, and memorandums of understanding in the areas of developing the scientific research system, establishing joint scientific degrees, developing the education system, and exchanging Professors and students, with the aim of cooperation and student exchange with many universities and institutions of higher education in the world, in addition to concluding 9 agreements with university degrees at the bachelor's and bachelor's levels and at the master's and doctoral graduate levels, which contributes to informing university students about many international systems and at the program level and future jobs.

4- A cooperation protocol between Cairo University and Georgia, USA, in the field of agriculture. The memorandum of understanding signed by the two colleges under the auspices of Cairo University President, Dr. Mohamed Othman Elkhosht, includes creating joint cooperation in the fields of training, education and scientific research, and merging the American College with the Faculty of Agriculture at Cairo University in various activities. The memorandum also includes organizing joint workshops between the College of Agriculture and Life Sciences and the College of Agriculture in Cairo, and discussing the establishment of an accredited scientific degree from the two colleges, in addition to organizing joint visits for faculty members and students between the two colleges. To conduct various research sciences.





5- The Center for Risk Reduction and Environmental Studies at Cairo University wins funding for a climate change mitigation project in cooperation with Lancaster University in England. The research project will create new opportunities in the Egyptian market for the production of commercial biofuels, which in turn contributes to the creation of new jobs, enhances rural development, and generates wealth in the growing Egyptian bioeconomy, noting that the demand for biofuels is expected to increase over the next ten years, leading to enhanced Egyptian global competitiveness in this context.



Sustainability Events



1- Workshop About Recycling



2- Workshop About Recycling



3- Campaign of the College of Media to raise awareness of climate change and the preservation of the environment



4- In cooperation with the Ministry of Environment and the USAID Economic Governance Project, A simulation model for the 27th session of the Conference of the States Parties to the United Nations Framework Convention on Climate Change COP27



5- Green Tourism Initiative In cooperation with the Ministries of Tourism and Environment



6- Initiative to spread awareness of the use of solar energy. Over the past years, the Egyptian state has paid great attention to renewable energy. President Abdel Fattah El-Sisi stressed that Egypt is rich in natural resources, especially wind and solar energy, which qualifies it to be one of the largest producers of renewable energy. Cairo University also has cooperation in spreading awareness of solar energy by different events



7- Examples of conferences organized by the university in the field of environmental sustainability and climate change



8- Examples of some students' creativity



9- Cairo Medicine Forum on Climate Change



10- Establishment of green library

كيفية المحافظة على البيئة

- 1 المحافظة على النظافة الشخصية ثم الانتقال الى نظافة البيت والحدائق وهكذا للوصول الى نظافة البيئة ولا يمكن عزل جزء عن الاخر.
- 2 زيادة زراعة الاشجار في المساحات الفارغة لزيادة تنقية الهواء.
- 3 منع الزحف العمرانى الذى بدوره سبب قطع الاشجار وموت الكثير من الكائنات الحية التى تتغذى على هذه الاشجار.

اهمية المحافظة على البيئة

نعيش على هذه الارض وتستمتع بما حباها الله به من نعم ومزايا واجدها فى هذا الكوكب ليكون للحياة والعيش الكريم. وكل ما يتعلق بالارض ينبغى منا ان نحافظ عليه من اى اذى لان اى خلل فى التوازن والنظام الذى اوجده الله سبحانه بالضرر على اهله.

11- Workshop about Preserving the environment (My environment is clean and beautiful)

CAIRO UNIVERSITY SUSTAINABILITY OFFICE

Sponsored by Cairo University President Prof. Mohamed Osman Elkhoht Under the supervision of Vice President Prof. Mohamed Samy

In celebration of Sustainability day, we explore: Role of students in Sustainability

October 27th From 10 AM - 4 PM Hall

Deadline: 26th of October

12- Sustainability Day

جامعة القاهرة وفاق الاستدامة

لحم رعاية معالي رئيس جامعة القاهرة
أ.د محمد عثمان الخشت
وإشراف عام
أ.د محمد سامي عبدالصالح
نائب رئيس جامعة القاهرة لشؤون خدمة المجتمع وتنمية البيئة
وإشراف تنفيذي: د. سوبر رمضان فهمي
المسئول العام لمكتب الاستدامة
أ.د شون ماهر
وكيل كلية الصيدلة لشؤون خدمة المجتمع وتنمية البيئة
د. محمد نجيب محمد
المدير التنفيذي لمكتب الاستدامة

يشرف قطاع خدمة المجتمع وتنمية البيئة بجامعة القاهرة بدعوة سيادتكم لحضور ورشة عمل بعنوان: جامعة القاهرة وفاق الاستدامة في إطار الاحتفال باليوم العالمي للاستدامة تنظم جامعة القاهرة مؤتمر جامعة القاهرة وفاق الاستدامة

بقيها:

01 كلمة أ.د. محمد سامي عبدالصالح
02 كلمة أ.د. سوبر رمضان
03 أهداف ورؤية مكتب الاستدامة
04 كلمة د. محمد نجيب المدير التنفيذي لمكتب الاستدامة
05 التنمية المستدامة افاق جديدة
06 مخططات من تطبيق الاستدامة في مصر
07 تقييم مشاريع الطلبة المشاركين وتكريم الفائزين

13- Cairo University and the prospects for sustainability

جامعة القاهرة وفاق الاستدامة

معايير وشروط المسابقة

- 1 فكرة مبتكرة، تعرض لأحد محاور الاستدامة بشكل واف
- 2 المشاركة فردية او ثنائية مع الإبقاء بمشاركة واحدة
- 3 مراعاة التقيد باستخدام شعارات الجامعة والتنمية المستدامة ورؤية مصر ٢٠٣٠
- 4 يسل لغرض خدمة المجتمع وتنمية البيئة عرض الأبحاث الفائزة في الترويج لثقافة الاستدامة
- 5 ان يتم استلام اى مشاركة بعد الموعد المحدد وجمع المشاركات يتم تسليمها إلكترونيا من خلال الرابط

إلى إطار فعاليات الاحتفال باليوم العالمي للاستدامة نحن جامعة القاهرة عن إقامة "مسابقة جامعة القاهرة وفاق الاستدامة" بالذات طابعها وتعليمها للمشاركة فنيوسا او ماستر او تصوير وتوثيقا يعبر عن أحد المحاور الآتية:

- 1 الاستدامة البيئية
- 2 توفير الطاقة والطاقات المتجددة
- 3 ترشيد استهلاك المياه
- 4 تقليل البصمة الكربونية

أخر موعد لاستقبال المشاركات يوم الاثنين الموافق 2021 /10 /25

لتسليم المشاركات

الزيرة من التفاصيل عن المسابقة والجوائز المقصدة تجدها على الرابط التالي shorturl.at/psEH

تهدف هذه المسابقة الى التعرير عن الاستدامة البيئية وأنما مناهجها من خلال مقالات الجامعة shorturl.at/psARV

14- Sustainability Competition

أسبوع صحتك يا شباب

بالمبنى أمام مكتبة المركزية

٢٠١٠/١٢/٥ حتى ٢٠١٠/١٢/٩

الأيام	جراحة	باطنه	جثة
الأثنين	٣٥	٥٣	٧٧
الثلاثاء	٣٥	٤١	٦٦
الأربعاء	٤٨	٨٣	١٣٠
الخميس	٦٤	٩٩	١٦٣
الاجمالي	١١٣	٣٧٤	٤٣٦

15- Your health week guys





16- Environmental Awareness Week



17- Drinking water seminars between pollution and poisoning



18- Steroids and youth, causes & risks



19- World Environment and Green Economy Day



20- Cycling Marathon



21- Celebration of the World Mental Health Day and in line with the efforts of Cairo University for sustainable development



23- Today's session 1018/ on sustainable development and waste recycling to produce educational aids for children Presenter of the symposium Prof. Dr. Samah Abdel Fattah Marzouk The symposium included two topics
 1- Sustainable development and how to conserve natural resources and rationalize consumption
 2- Recycling waste to produce educational aids for the child



22- Cairo University competition "Cairo University and Future Prospects" within the framework of Cairo University's celebration of Sustainability Day



24- «Get Green» Initiative It aims to change behaviors, spread environmental awareness, and urge citizens, especially young people, to participate in preserving the environment and natural resources to ensure their sustainability in order to preserve the rights of future generations. The initiative also aims to spread awareness of the preservation and management of natural reserves according to international standards, in order to ensure the preservation of the balance of ecosystems and to maximize opportunities for economic and social development. The initiative launched by the Ministry of Environment raises awareness of the importance of afforestation, recycling of waste, rationalizing food and energy consumption, reducing the use of plastic, preserving marine creatures, reducing air pollution, and protecting nature reserves.



25- «Media and Sustainable Development Forum»



27- The mechanism of World Sustainability Day



29- "Information and awareness of the dimensions of greendevlopment."



26- «Sustainable step»



28- "Being" event: The main goal of this event was to convey a message about how women are affected by climate change in an easy and simple way, through participation in games and activities. Hundreds of students from different levels and colleges participated in these activities.



30- Rebit event, through which the project presented a workshop in which it presented a set of ideas that help recycle household waste, under the slogan "Make use of it instead of throwing it away."



31- An event within the Desiwan project. The event aimed to spread awareness of the environmentally friendly products of the city of Aswan, and gifts of Aswan products were provided to the attendees.



32- Students reuse pottery fragments to create decorative units to maintain traditional vocabulary



33- Recycling broken pottery to make decorative units or murals

34- A student project participating in the Climate Change Competition on the occasion of Egypt's hosting of the COP 27 Global Climate Summit under the auspices of the Egyptian Ministry of Culture, in the field of a design proposal to modernize and reuse an existing historical or heritage building.

تحت رعاية أ.د. نعيم الكيلاني وزير الثقافة

 بنسب أ.د. هشام عزمي الأمين العام للمجلس الأعلى للثقافة و أ.د. سحر عثمان مدير لجنة الفنون التشكيلية والعمارة

 دعوة الفنانين والمعماريين المصريين للمشاركة في

مسابقة تشكيلية ومعمارية حول موضوع - التغيرات المناخية -

 بمناسبة استضافة مصر لقمة المناخ العالمي 27 Cop

فرع الفنون التشكيلية

التغيرات المناخية ومدى مخاطرها وتأثيراتها

 على الساحل المختلفة

 التغيرات المناخية ونسبة المصحية

 التغيرات المناخية والتنمية المستدامة

 التغيرات المناخية والأمن الغذائي

 التغيرات المناخية والتوعية البيئية

 التغيرات المناخية والساحل البيئية

 التغيرات المناخية والطاقة المتجددة

 التغيرات المناخية ونباتية البحيرة العالمية

 التغيرات المناخية وكوكب الأرض

فرع العمارة

 العمارة وتحديات تغير المناخ ويتضمن

 1- تقديم تصميم لمبنى صديق للبيئة

 2- اقتراح تصميمي لتحديث وإعادة

 استخدام مبنى تاريخي أو تراثي قديم

 3- تقديم كتاب، أو مقال، أو مخطوط كتاب، أو فصل

 في كتاب، أو مقال، يتناول إحدى القضايا

 البيئية المرتبطة بالعمارة والعمران

 4- حملة توعوية أو مبادرة تساهم في

 نشر الوعي بالمدال المعماري والعمراني

 والاعتبارات البيئية وتحديات تغير المناخ



35- Competition for the best development project (environmentally friendly projects)



36- Climate Forum under the title “The effects of climate change on the agricultural sector in Egypt and the role of volunteers from agricultural colleges in confronting it”



37- Symposium entitled: “Climate changes and agricultural production”



38- Seminars on the Earth on the occasion of the World Earth Day



39- “Integrated management systems for agricultural waste”



40- “You are stronger than drugs” seminar



41- Nation Symposium "Health is Quality of Life"



42- "The development of irrigation systems and the development of water resources"



43- The nation held a training course entitled "Recycling Organic Waste"



44- "Organic waste recycling"



45- Expert training course in the field of rooftop farming



46- Sustainability in food systems



47- Green day seminar 1



48- Green day seminar 2



49- A workshop entitled: Our college is better for us and our farm is better for us



50- Climate change seminar



51- Plant a tree and ride a wheel workshop



52- Sustainability seminar



53- My country's reserves initiative in the eyes of my children



54- Yusr initiative to raise the efficiency of the administrative apparatus

Inovative Stratigy for Sustaiability Development in Cairo University

The term «innovation» is frequently used to describe «the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices workplace organization or external relations». Moreover, innovations not only may affect societal behaviors and environments, but they can also ensure that organizations, institutions, communities, and society as a whole become more sustainable. Given the unique setting generated by global climate change discussions, the systemic nature of environmental challenges, and the societal ramifications of sustainable development goals, CU must implement well-designed innovative sustainable development strategy. Viewed with the Egyptian 2030 strategy, CU innovative sustainable development strategy will based on seven main axes, including integration, interdisciplinary, communication, partnerships, sustainability, internationalization, entrepreneurship and innovation. Cairo University will foster innovation and entrepreneurship by building company incubators and innovation centers and incorporating entrepreneurship into its academic programs. Besides linking with industry to develop market-ready graduates, CU innovative sustainable development strategy will focus on enhancing internationalization through establishment of CU international branch which developed and opened this year. In addition to technology transfer efforts, CU is devoted to increasing its innovation capabilities. National and international collaborations with academia, industry, and society help to achieve these objectives. Innovation will be addressed from three mutually interrelated perspectives: 1) Rules and incentives for high quality innovations, 2) Interaction between performers in the innovation ecosystem to support flow and collaboration, and 3) Faculty and student entrepreneurial capability to create impact.

Cairo University aspires to be at the forefront of scientific and technological

advances by conducting global research and educating future leaders and professionals through the delivery of impactful knowledge in all sectors and disciplines, as well as acting as anchors in the communities they serve on a national and international scale. Cairo University realized the urgency of the massive growth while limiting environmental deterioration and depletion of natural resources, maintaining biodiversity, profiting from trash by transforming it into massive production projects, and mitigating climate change risk. Thereby, Cairo University must be involved with the «circular economy» (CE) paradigm in the future, which offer an alternative to the existing «linear» economy as it will helps both the environment and the economy. In agrrement with report of, in the future, CU must foster innovative models that promote or integrate into circular economies which encourages resource efficiency and long-term growth.

Furthermore, institutions that mitigate sustainability concepts throughout the programs prepare their students to apply sustainability values in their proficient fields. Sustainability practices can be included into formal universities curricula by providing students with the chance to become change agents through hands-on experience, also known as curricular and operational innovation. The availability of sustainability courses and content across several departments helps to guarantee that the institution's approach to sustainability education is comprehensive and covers a wide range of issues. This allows pupils to have a wide understanding of the subject. Similarly, providing sustainability course content across multiple areas helps improve student exposure to sustainability concepts and themes. In the next year, a course inventory project to identify courses related to sustainability in the CU will be applied and will be included in its website. It is CU's obligation to formalize plans for lowering total energy-related emissions and fossil-fuel-related emissions from various operations in accordance with the national Climate Action Plan targets.

Another way to develop CU innovative sustainable development strategy is living labs, which are well suited for ,wicked' multi-stakeholder challenges

or solutions. Living labs are founded on three pillars: learning as an intrinsic component of projects, user interaction, and innovation as a goal. Living labs are a type of experimental governance in which stakeholders develop and test innovative technologies and modes of life to solve climate change and urban sustainability concerns. In the future, CU will increasingly adopting the living lab approach to provide ideal real-world settings for doing practical research. Living labs in the subject of sustainability solve practical problems related to architectural design, green infrastructure, and low carbon technologies through collaborative experiments that include users and stakeholders as knowledge co-producers.

Although it is currently practiced in many areas, renewable energy is one of the most significant steps toward sustainable development. Wind power, geothermal energy, and solar heating are examples of renewable energy technologies that can reduce carbon dioxide concentrations and fossil fuel usage. In its attempt to decrease the carbon footprint, CU will propagate in the establishment of solar cells in all its buildings. Moreover, a new recycling waste bank will be established within the next two years to manage the recycling process separately and activate the system of 3 Rs (Reduce, Reuse, recycle) in the campus. This bank will help in the establishment of a biogas station in the CU as another source of renewable energy production in the campus.