



# Pharos University in Alexandria



## The Sustainable Development Goals Report **2019-2020**

**Compiled by  
Boshra Salem, Prof.  
Dean, Post Graduate Studies and Research  
Pharos University in Alexandria**

## Content

Item	Page
I. Introduction	4
II. Involvement of Pharos University strategic Plan with UN-SDGs, Egypt-2030 and the national strategy of the State Ministry of Higher Education and Research	5
III. Contribution of Pharos University to achieving SDGs of Relevancy.	8
<b>SDG1 : No Poverty.</b>	<b>9</b>
3.1 Activities	9
<b>SDG3 : Good Health</b>	<b>12</b>
3.1 Conferences and workshops	12
3.2. Activities.	16
3.3 MOUs with hospitals for Students' Training.	21
3.4 Cooperation in the health sector, NGOs and private sector	22
3.5 Activities of Pharos University Clinics	24
3.6 international mobilities	27
3.7. Student's Projects	29
3.7.8 Research Publication in Health Sector	30
3.9 courses in curricula	37
<b>SDG5 : Gender Equality</b>	<b>39</b>
5.1. Students	42
5.2. Graduates	45
5.3. Postgraduates	46
5.4. Academic Staff	47
5.5. Employees	52
5.6. Conclusion	53
5.7 . Registered Students in the first Academic year 2006-2019	54
<b>SDG6 : Clean Water and Sanitation</b>	<b>55</b>
6.1. University management Plan for water Conservation	55
6.3. Courses in curricula	55
6.2 Publications	56
<b>SDG7 : Affordable and Clean Energy</b>	<b>57</b>
7.1. Activities	57
7.2 Students' Projects	57
7.3 Courses in curricula	59
7.4. Publications	60
<b>SDG8 : Decent Work + Economic Growth</b>	<b>61</b>
8.1 Policies	61
8.2 Workshops, Conferences and Seminar	61
8.3 Meetings and activities	62
8.4 Students' Projects	64
8.5 Courses in curricula	64
<b>SDG 9. Industry Innovation and Infrastructure</b>	<b>65</b>
9.1. Conferences and workshops	65
9.2 Students' Projects	66

9.3. Courses in curricula	68
9.4. Publications	68
<b>SDG 10 Reduces Inequalities.</b>	<b>70</b>
10.1 Activities	71
10.2. Students' Projects	71
10.3. Courses in curricula	72
<b>SDG11: Sustainable Cities and Communities</b>	<b>73</b>
11.1 Conferences and workshops	73
11.2 Activities	73
11.3 International Mobilities	74
11.4 Courses in curricula	75
11.5. Publications	76
<b>SDG12 Responsible Consumption Production</b>	<b>77</b>
12.1 Conferences and workshops	77
12.2 Projects	77
12.3 Activities	78
12.4 Courses in curricula	78
12,5 Publications	79
<b>SDG13 : Climate Action</b>	<b>80</b>
13.1 Activities	80
13.2. Students' Projects	80
13.3. Courses n curricula	80
<b>SDG14. Life below Water</b>	<b>81</b>
14.1. Activities	81
14.2 International mobilities	81
<b>SDG15. Life on Land</b>	<b>82</b>
15.1. Activities	82
15.2. Courses n curricula	82
<b>SDG16. Peace, Justice</b>	<b>83</b>
16.1 Conferences and workshops	83
16.2 International mobilities	84
16.3 Courses in curricula	84
<b>SDG17: Partnership for the Goal</b>	<b>85</b>
17.1 Conferences and workshops	85
17.2. Activities	92
17.3. Cooperation with Ministries, Governmental and non-Governmental Organization (NGOs)	104
17.4 Local MOUs	106
17.5. International Partnerships	109
17.6 International mobilities	113
17.7 Students' research Projects	115
17.8 Collaboration in research publications	120

# Pharos University

## Sustainability reporting on SDGs 2019 - 2020

### I. Introduction

At the 70th Session of the United Nations General Assembly in September 2015, member states adopted a new global development agenda, *Transforming our world: the 2030 Agenda for Sustainable Development*. There are 17 development goals for sustainable development set out by the UN. At its heart are 17 Sustainable Development Goal. These goals were launched as a global agenda for addressing the multiplicity of social and environmental challenges that face communities.

All Sustainable development goals (SDGs) are increasingly integrated at all levels in universities, including its overall strategy. Egypt has responded to the 17 SDGs by setting national plan: Egypt 2030 (<http://sdsegypt2030.com/?lang=en>). The third Pillar of this plan is on: Knowledge, Innovation and Scientific Research, which includes the following group of elements and components:

- General environment: Represents the role of the State in the creation of an environment that encourages innovation, including motivators and constraints, the economic system, policies, legislation, and principles of governance.
- Infrastructure: Play a fundamental role in supporting the cognitive and creative production by setting standards and laying regulatory foundations of innovation and scientific research, supporting business and innovation, protecting copyright, ensuring availability of information, financing and encouraging investment.
- Education and scientific research: Includes all research organizations and institutions, technical education and vocational training institutions, higher education and scientific research institutions, and research centers.
- Industry: Represents all industrial sectors including large, medium, and small scale companies' activities relevant to research and development.
- Intermediaries: Includes the institutions that link between industrial innovation, and research and development on the one hand, with academic and research institutions on the other hand.
- Development needs: Represents the required demand for innovation, knowledge, and scientific research to fulfill economic and social needs.

### II. Involvement of Pharos University strategic Plan with UN-SDGs, Egypt-2030 and the national strategy of the State Ministry of Higher Education and Research

Pharos University has a direct involvement and input into the UN-SDGs, Egypt-2030 and the national strategy of the state ministry of Higher education and research (Table 1). Development of the strategic goals of Pharos University meet the UN-SDGs , and contribute to identify the national problems and challenges and enable adaptive management through its internal processes (rules and regulations), and external relationships (internationalization and partnerships) (<http://www.pua.edu.eg/international/international-partners/>).

Table 1 The compliance of Pharos university Goals with the UN-SDGs

Pharos University goal	Relation to UN-SDG
1. Raising the efficiency of the institutional capacity to improve competitiveness	GOAL 8: Decent Work and Economic Growth
2. Enhancing and supporting the educational system	GOAL 4: Quality Education GOAL 5: Gender Equality
3. Expanding the support to internationalization	Goal 17 Partnership to achieve the goals
4. Developing the scientific research system and post graduate studies to meet the national strategy	GOAL 4: Quality Education GOAL 5: Gender Equality
5. Expanding the activities of community services and environmental development	GOAL 11: Sustainable Cities and Communities
6. Raising the competitive skills of students	GOAL 4: Quality Education GOAL 5: Gender Equality

The strategic goals of Pharos University (<http://www.pua.edu.eg/about-pua/vision-and-mission/>) were reviewed and updated to meet the national strategies of sustainable development - Egypt 2030, Pillar 3: objectives for the knowledge, innovation, and scientific research to 2030 (<http://sdsegypt2030.com/wp-content/uploads/2016/10/4.-Knowledge-Innovation-Scientific-Research-Pillar2.pdf>).

Table 2 . below indicate the direct involvement of pharos university in with the Sustainable development Strategy: Egypt 2030 (per objective ) and the corresponding goals of Pharos University .

Table 2. Involvement of Pharos University with Egypt 2030 strategy

Objective for Knowledge, Innovation, and Scientific Research to 2030 (National SDG Plan)	Definition as indicated in the Sustainable development Strategy: Egypt 2030	Corresponding Pharos University Goal
Creation of a stimulating environment for the localization and production of knowledge	Maximizing knowledge production by enhancing the legislative, investment, and financing environments and providing the fundamental infrastructure	Goal 2. Enhancing and supporting the educational system Goal 1. Raising the efficiency of the institutional capacity to improve competitiveness
Activation and development of an integrated national innovation system	Enhancing the efficiency of innovation production by encouraging creative production, increasing the links between innovation and developmental needs, the development of basic education and higher education as well as research and development	Goal 4. Developing the scientific research system and post graduate studies to meet the national strategy
		Goal 6. Raising the competitive skills of students.
Linking the knowledge applications and the innovation outputs with priorities	Determining the sectorial priorities and challenges, how to address them by working on increasing the knowledge product for the priority sectors and by raising the local content	Goal 4 Developing the scientific research system and post graduate studies to meet the national strategy. Goal 5. Expanding the activities of community services and environmental development

The Ministry higher education and research has formulated its strategy to cope with EGYPT 2030 Plan. It is available in Arabic in : [http://portal.mohe.gov.eg/ar-eg/Documents/Strategy\\_mohe.pdf](http://portal.mohe.gov.eg/ar-eg/Documents/Strategy_mohe.pdf)

This strategy is basically summarized in improving 5 main aspects. These are (Translated by author)

- Education
- Scientific research and Innovation
- Capacity building
- Community Services
- Health

Under the aspect of Scientific research and Innovation the following items are included (Translated by author):

1. Accessibility: education accessibility for all
2. Quality: Improvement of quality education system to be consistent and coping with international quality systems
3. Competitiveness: Improvement of outcomes of universities in a competitive manner (ranking)
4. Internationalization: Formulation of MOUs with international universities with the purpose of launching branching of these universities in Egypt, And establishment of joint research and educational programs.
5. Community services: Improvement of community services in the field of health (university hospitals), Medical cohorts, cooperation with NGOs, and awareness activities to alleviate illiteracy and combat corruption

The goals of Pharos university are compliant with all the above items as one of the private universities that is recognized and accredited by the Ministry of higher education and research in Egypt. Table 3 shows the alignment of Pharos University Goals with the goals of the Higher ministry of Education .

Table 3 . Alignment of Pharos University Goals with the goals of the Ministry of Higher Education

Goals	Pharos University Goals	Goals of the Ministry of Higher Education
Goals 1.	Raising the efficiency of the institutional capacity to improve competitiveness.	Improvement of outcomes of universities in a competitive manner (ranking).
Goals 2.	Enhancing and supporting the educational system	Improvement of quality education system to be consistent and coping with international quality systems
Goal 3.	Expanding the support to internationalization	Internationalization: Formulation of MOUs with international universities with the purpose of launching branching of these universities in Egypt, And establishment of joint research and educational programs.
Goal 4.	Developing the scientific research system and post graduate studies to meet the national strategy	Improvement of outcomes of universities in a competitive manner (ranking)

Goal 5.	Expanding the activities of community services and environmental development	Improvement of community services in the field of health (university hospitals), Medical cohorts, cooperation with NGOs, and awareness activities to alleviate illiteracy and combat corruption
Goal 6.	Raising the competitive skills of students	education accessibility for all

Pharos University in Alexandria (PUA) is the only private university in Alexandria. Apart from the international research activities, PUA promotes youth development and foresees the empowerment of young generations to be entrepreneurs in a compressive manner. PUA also is concerned more with local issues and collaborate with local NGOs and Schools to contribute to achieving SDGs. There have been several activities regionally and globally that adds to the SDGs that is either lightly covered or not covered in the previous report of 2018-2019

The university recognizes and follows the articles in the national constitution that is relevant to SDGs 2014 [https://www.constituteproject.org/constitution/Egypt 2014.pdf](https://www.constituteproject.org/constitution/Egypt%202014.pdf) regarding achieving social justice and providing means of social independence (Article 8 ), ensuring equal opportunities for all citizens without discrimination (article 9), ensuring achievement of equality between men and women In all aspects (article 11), including appropriate representation of women, guaranteeing women’s right of holding senior management offices in allsectors, and protect women against violence and enabling her to strike the balance between family duties and work requiments (article 11). Pharos University also has established an employments’ insurance system that follows the social insurance system in a manner that guarantee a decent life (Article 17) .

From the point of view of Pharos university, the 17 SDGs can be categorized into 4 categories.

1. Social wellbeing category including SDGs 1,2,3,4,5,8, 10, 16
2. Environmental Category including SDGs 6,7,12,13,14,15
3. Community advancement Category including SDGs 9,11
4. Outreach Category including SDG17

This report summaries the activities carried out by Pharos university in 2019-2020 to achieve the UN-SDGs. The activities take different forms; conferences for discussions, dialogues and exchange experience on SDG topics, community services by staff members form different departments, students community Projects, identification of problems and research, and internal reports from departments. Each SDG is dealt with separately in the following sections of the report.

### **III. Contribution of Pharos University to Achieving SDGs of Relevancy**



## SDG 1 – No Poverty

This Goal calls for an end to poverty in all its manifestations by 2030. It also aims to ensure social protection for the poor and vulnerable, increase access to basic services and support people harmed by other economic, social and environmental disasters.

### Tuition Fees Waiving to both Males and Female students in almost all Faculties of Pharos University.

Inline with this goal, Pharos University Supports some students in- need with full scholarships, and others with waiving students fees up to 50% depending on social assessments <https://www.pua.edu.eg/pua-admission/scholarships-and-tuition-waivers/> and <https://www.pua.edu.eg/pua-admission/tuition-fees/>

In the academic year 2019-2020, there were 1362 scholarships and tuition fees waiving to both males

Faculty	Number of Students					Discount ranges
	Ministry scholarships	Special cases (Pharos Social responsibility)	Pharos Scholarships	Grants for with high grades	Total	
Pharmacy and Drug Manufacturing	45	15	0	12	72	10% - 15% - 20% - 50%
Dentistry	38	8	12		58	10% - 15% - 20%
Engineering	3	9	936	23	971	10% - 20%
Financial and Administrative Sciences	0	1	0	6	7	15% - 20%
Languages and Translation	6	1	0	17	24	20%
Legal Studies	0	1	30	6	37	0
Tourism and Hotel Management	0	2	62	5	69	15% - 20%
Physical Therapy	36	5	0	12	53	10% - 15% - 20%
Mass Communications	0	0	0	11	11	20%
Arts and Design	0	2	0	22	24	15% - 20%
Health Sciences Technology	14	4	0	18	36	10% - 15%
Total	142	48	1028	144	1362	

and female students compared with 97 scholarships in 2018-2019, in almost all faculties (Table 4).

According to private and confidential social assessments carried out for each student, the amount of waiving of fees is determined. It ranged between 10% to 50%.

### 1.1. Activities:

- The faculty of Tourism and Hotel Management organized a humanitarian convoy to deliver blankets to some of the needy families in Abdel Qader District families. This convoy was launched on Tuesday, 17 December 2019 in cooperation with the Social Activities Committee affiliated to the Student

Activities Department and Elestkrar Charity. After studying each family's situation, the students bought 90 blankets and distributed them to the needy families to alleviate their burden.



<https://www.pua.edu.eg/pua-humanitarian-convoy/>

- **The Student Activities Department** organized a humanitarian aid convoy on **24/1/2020** to deliver blankets to Abees District in Alexandria. The organization of this convoy was managed in coordination with the Ministry of Social Solidarity and Alexandria Governorate. It is worth mentioning that a large number of students from **different faculties** participated in this convoy. In addition to that, the convoy was accompanied by supervisors from the Security and Student Activities departments, Prof. Hesham El Shimy, the Student Activities Leader and Prof. Ramadan Abo El Ala, the PUA Vice President. Moreover, Dr. Jackline Azar, the Deputy Governor of Alexandria was keen to participate and follow up the proceedings of this convoy where she expressed her admiration for the university's activities in the field of community service and the students' behavior.



<https://www.pua.edu.eg/pharos-university-sent-a-humanitarian-aid-convoy-to-abees-district-in-alexandria/>

- The **Student Activities Department** organized **five humanitarian aid convoys** to deliver blankets to the needy areas in both the east and west of Alexandria. These convoys were launched on **6 and 8 February 2020**, in coordination with a number of public charity organizations, including Rowad Elkheir, Elmotadaroon, Mojeeb Elsaleen which located in Rabaa Elnasriya, Abees neighbourhood as well as Elestkrar and Abdelkader charities located in Toshka, Alamreya neighbourhood. It is worth mentioning that a large number of students from different faculties participated in these convoys. The coordination of these convoys was managed by both the personnel of the Student Activities Department and Prof. Ramadan Abu El-Ala, the Vice President of Community Service and Environment Development Affairs.



<https://www.pua.edu.eg/pua-sent-aid-convoys-to-the-needy-in-eastern-and-western-areas-of-alexandria/>

- In the light of the **Student Activities Plan** set for the academic year 2019-2020, **Dream Team, one of the PUA student-led clubs**, organized a **humanitarian aid convoy** to deliver blankets to one of the needy areas in Alexandria. This was held on Friday, **20 December 2019**. The coordination of the convoy was managed in collaboration with Tarek El Kheir Charity. Before sending the convoy, the PUA students made a survey about the socio-economic status of the residents. Based on the findings of this survey, blankets were distributed among widows and orphans of the needy families.



<https://www.pua.edu.eg/dream-team-organized-a-humanitarian-aid-convoy-2/>

The Faculty of Pharmacy held its Charity Market day under the auspices of the Student Activities Department, on Tuesday 16/4/2019 at the entrance foyer of the faculty. The activity included distributing goods in low prices for the most needed community dwellers.

## SDG 3 – Good Health

Major progress has been made in improving the health of millions of people, increasing life expectancy, reducing maternal and child mortality, and fighting against leading communicable diseases. Concerted efforts are required to achieve universal health coverage and sustainable financing for health, to address the growing burden of non-communicable diseases, including mental health, and to tackle antimicrobial resistance and determinants of health such as air pollution and inadequate water and sanitation. Pharos University has records in this regard including aid convoys, different health initiatives, conferences and seminars, activities of Pharos university clinics, local national and international cooperation and international research publications. Below is a summary of Pharos University achievements in the health sector.

### 3.1. Conferences / Workshops and Seminars:

- The faculty of Dentistry participated in the “AEEDC Cairo Education Conference and Exhibition” which was held at the Royal Maxim Palace Kempinski Hotel in the 5th Settlement – Cairo on 12-14 December. The AEEDC Cairo Education Conference and Exhibition is considered one of the highly specialized scientific and educational events dedicated to dentistry professionals in Egypt and the wider MENA region. It also discusses the most important issues and the latest developments in the field. The PUA dental students visited the AEEDC exhibition where they got apprised of the state-of-the-art dental equipment and materials. It is worth mentioning that PUA dental students presented many research papers in this conference.



<https://www.pua.edu.eg/a-visit-to-aedc-education-cairo-conference-and-exhibition/>

- The faculty of Dentistry participated in the Egyptian Dental Exhibition (EDE 2020) on Thursday, 13 February 2020 in at Cairo International Convention Centre (CICC). The trip aimed at apprising the PUA delegation which included a number of faculty members, teaching assistants and students of different academic years of the state-of-the art equipment and technology in general and in the field of dentistry in particular.



<https://www.pua.edu.eg/the-faculty-of-dentistry-organized-a-trip-to-the-egyptian-dental-exhibition/>

- On 21 March 2019, the faculty of Pharmacy organized a workshop on "First Aid". The workshop addressed the general procedures of first aid for casualties and how to deal with exceptional cases for saving lives e.g. handling burns, Fainting and cases of artificial respiration



- The Faculty of Pharmacy and Drug Manufacturing at Pharos University organized a symposium entitled "OTC from A to Z" on Tuesday, 3 March 2020. The lecture was delivered by Dr. Magdy Shalash, the Director of El Taybey Academy for Pharmaceutical Training and Dr. Sally Ibrahim, the Head OTC Department at El Taybey Academy for Pharmaceutical Training. It is worth mentioning that the symposium discussed the following points: How the pharmacist deals with different cases of chronic Arthritis? How to dispense medicines without medical prescription and what are these OTC drugs? What are the cases that should be directly referred to a physician not a pharmacist?

<https://www.pua.edu.eg/otc-from-a-to-z-symposium/od>

- In cooperation with Eva Pharma company, The faculty of Pharmacy organized a campaign on healthy nutrition. Within this event, a side activity was held to measure the percent of body fats and the body water content using "Inbody" devices. A lecture was delivered to raise the awareness of students on healthy food and nutritional healthy trends
- On 8 March 2019, the faculty of Pharmacy organized a to the local community in EZBET Al Fetaa on general health conditions campaign. The campaign included measuring the blood sugar level, body fats and how to avoid hypertension. The campaign included also awareness about cancer and potential occurrence.

- The Faculty of Pharmacy held its biannual Conference on Pharmacology in the spring semester of the academic year 2019-2020. The conference was carried out under the auspices of the president of the university, and is



supported by several pharmaceutical companies and AUF agency of France. The conference was attended by about 300 expert and researcher, where 102 scientific papers were presented, and published in the conference booklet after being reviewed. International attendees were from France, Finland, Sweden, and Canada. Selected scientific presentations in the conference included:

- Nutrition in Clinical Practice
- The Road from Pharmaceutical Sciences to Patient Care Approach
- Vaccine Nanotechnology; Frontiers and Challenges
- Antibiotic Resistance: A Global Crisis That Requires Out-of-the-Box Solutions
- Advanced Therapeutic Approaches in Managing Diabetic Foot Ulcer
- Burden of Helicobacter pylori Infections and Associated Risk Factors among Cases of Iron Deficiency Anemia in Egypt
- Public Knowledge and Attitudes Towards Antibiotic Usage: A Cross-Sectional Study Among the General Public in Alexandria
- Cross Sectional Study: General Features of Food Allergy in Alexandria
- The Impact of Rising Drug Prices in Egypt
- The Future of Pharma from Evolution to Revolution.
- Documenting Mistakes in Governmental Hospital Pharmacies in Alexandria, Egypt

<https://www.pua.edu.eg/icmaps/>

- On 22 November 2019, the faculty of pharmacy organized a campaign on heart diseases and the relation between the function of the heart and the rest of the body organs. The campaign concentrated on the chronic heart diseases and how to deal with them and avoid them.
- The faculty of Physical Therapy organized a seminar entitled “Advanced Management of Spinal Cord Injuries” on Tuesday, 10 December 2019. The seminar’s keynote speaker was Dr. Mahmoud Yasser, a Spinal and Orthopedic Surgery Consultant who addressed the following points: The advanced treatment methods of spinal cord injuries. Showing examples of x-rays of people who had accidents. The role of physical therapy in following cases after surgery and helping in patients’ rehabilitation.

<https://www.pua.edu.eg/advanced-management-of-spinal-cord-injuries/>



- The faculty of Physical Therapy organized the 1st scientific forum of “Biomechanics” on Tuesday, 24 December 2019 in the Student Theater. The forum included 15 biomechanical models. These models showed a cross section of the body explaining the relation between the muscles and bones and its impact on the body mechanics. The models also showed the surfaces and axes that joints of the body move around. In addition, the representatives of each group of students talked about their projects and the materials used in this project. It is worth mentioning that the students took the principles of sustainable development into consideration by recycling old materials used in the design of previous models, including plastic spoons, empty cups, fiber and wood. <https://www.pua.edu.eg/the-faculty-of-physical-therapy-hold-the-first-scientific-forum-of-biomechanics/>



- The Faculty of Applied Health Sciences Technology organized a symposium to raise the awareness of coronavirus on Tuesday, 10 March 2020. The symposium was delivered by Dr. Mohamed Salah El Din, an Assistant Professor of Biochemistry and Immunity in the Medical Laboratory Department. The symposium explained the modes of the coronavirus transmission, its symptoms and methods of protection. <https://www.pua.edu.eg/the-faculty-of-applied-health-sciences-technology-organized-a-symposium-about-coronavirus/>



- Students of Medical Equipment Maintenance Department (Faculty of Applied Health Sciences Technology) have won the third place in the “Pandemic TechHack – Egypt 2020” Competition out of 40 participating ideas which was held on Tuesday, 15 April 2020. The competition is a part of “The Egyptian Virtual Hackathon Against Coronavirus” which is a national initiative to unite efforts and resources using technology and science to: Confront the epidemic. Help reduce the spread of the virus in Egypt.

Find the technological solutions necessary for dealing with the resulting risks in the case of virus outbreak.

It is worth mentioning that this competition is one of the innovation and entrepreneurship competitions which are managed under the supervision of the Academy of Scientific Research and Technology, the U.S Embassy, the Egyptian Ministry of Health and Population and the American University in Cairo.



The participating students developed a Smart Coronavirus Mask “SCM” using a 3D design program. The SCM is for protection and early detection of COVID-19 and also sending the results to a mobile application that can automatically display and update the health status of the mask user.

<https://www.pua.edu.eg/pharos-university-won-the-third-place-in-pandemic-techhack-egypt-2020-competition/>

- The faculty of Mass Communication organized a symposium entitled “ The Role of Media in Combating Drug Abuse” on Tuesday, 3 December 2019. In the symposium the psychological and physical effects of drugs on the addict was discussed. The types of drugs and the general dangers of drug abuse and addiction and its psychological effects in particular were also highlighted. The following topics were discussed: the constructive and destructive roles of mass media in this issue, the procedures that should be followed in addressing this issue. At the last section of the symposium, freshmen presented some ideas of a campaign to be launched under the name of “Towards No Drug Abuse” accompanied by some videos.

<https://www.pua.edu.eg/the-role-of-media-in-combating-drug-abuse/>

### 3.2. Activities:


- The faculty of Pharmacy has established a specialized center for international publication consultation and nanotechnology in 2019. Since its opening, the center carried out about 200 research consultation including electronic ones. The manager of the center has signed 7 international MOUs for international publication, one of which is already published in the highest 5% ranked journals according to JCR. The MOUs are with:
  - Laboratory for Molecular Design of Pharmaceuticals, Faculty of Pharmaceutical Sciences,
  - Hokkaido University Japan
  - Department of Internal Medicine and Medical Specialties, University of Genoa, Genoa, Italy





- Department of pharmaceutics; faculty of pharmacy; Damanhur University
  - Department of pharmaceutics; Alexandria university
  - <https://www.pua.edu.eg/continuing-education/international-publication-nanotechnology-consultation-center-incc/>
- PUA-Faculty of Pharmacy participates in the alliance with a subproject entitled “Galanthamine / Chitosan Complex Nanoparticles: Form Bench to Bedside”. The current project aims at conducting a complete pharmacokinetic/pharmacodynamic study in Alzheimer’s disease animal model; which should be the starting point of transforming this prototype nanoparticle system from bench to bedside, offering better patient compliance, therapeutic outcomes, and decreased galantamine dose; thus lower production cost.  
<https://www.pua.edu.eg/continuing-education/international-publication-nanotechnology-consultation-center-incc/>
  - The Nutrition Department at the *Faculty of Allied Medical Sciences* launched “Healthy Campus Initiative” on Tuesday, 9 April, 2019. This initiative aimed at highlighting the profound impact of nutritional knowledge in eradicating health illiteracy. According to the findings of the researches conducted last year which showed low health and nutrition literacy, the main objective of this study is to raise the students’ nutritional and health awareness through informing the students the basic nutrients, their sources and functions as well as promoting conscious eating habits by using models of dietary guidance systems and healthy eating; traffic light system and healthy eating pyramid.  
<https://www.pua.edu.eg/the-faculty-of-allied-medical-sciences-launched-a-healthy-campus-initiative/>
  - The Faculty of Pharmacy held an awareness campaign on Blood pressure and heart diseases, and Osteoporosis among students of Pharos University on 5/3/2019, 22/11/2019 and 30/11/2019 respectively. Blood pressure and Blood sugar levels were measured during the campaign and used to serve the awareness activity.  
<https://www.pua.edu.eg/the-faculty-of-allied-medical-sciences-launched-a-healthy-campus-initiative/>
  - The Faculty of Pharmacy has established a project entitled : Integrated Pharmaceutical Alliance (IPA); towards production of technology based Egyptian Pharmaceutical products. The alliance is funded by the Academy of Scientific Research and Technology under the Egypt Research and Technology Alliances (EG-KTA) Program. Its general objective is the integration of pharmaceutical industry with academia, public sectors and Non-Governmental Organization (NGO) to deepen local manufacturing in pharmaceutical industries and increase its competitiveness.

**Integrated Pharmaceutical Alliance**

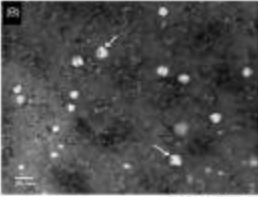
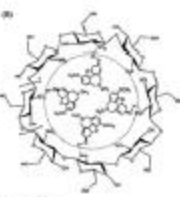


## 4- Pharos University in Alexandria (PUA)



Pharos University (PUA)  
Faculty of Pharmacy & Drug Manufacturing  
[www.pua.edu.eg/](http://www.pua.edu.eg/) [pharm@pu.edu.eg](mailto:pharm@pu.edu.eg)

**Dr. Maged El Ghazouly,**  
Dean & Prof. of Pharmacognosy, Faculty of Pharmacy  
[maged.elghazouly@pu.edu.eg](mailto:maged.elghazouly@pu.edu.eg)  
+20 1001708666

- Production of Galantamine/ chitosan complex Nanoparticles

GII-loaded CE-NP2 nanoparticles (Pharos)

**Integrated Pharmaceutical Alliance (IPA)**

Applicant: 

Knowledge Partners:










Industrial Partners:




Private Sector:





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**Integrated Pharmaceutical Alliance (IPA)**

Towards production of technology based Egyptian Pharmaceutical products






The alliance constitutes from different partners;

- 4 academic partners : German university( GUC), Pharos University in Alexandria (PUA) National Research Center (NRC), Arab Academy of Science, Technology and Martinme
  - 5 industrial partners : (El-Nasr, Memphis, Health Tech & ATOS),
  - 2 from public sectors
  - (NODCAR & Vacsera) and one NGO (Misr el Kheir)
- PUA-Faculty of Pharmacy participates in the alliance with a subproject entitled “Galanthamine / Chitosan Complex Nanoparticles: Form Bench to Bedside”. The current project aims at conducting a complete pharmacokinetic/pharmacodynamic study in Alzheimer’s disease animal model; which should be the starting point of transforming this prototype nanoparticle system from bench to bedside, offering better patient compliance, therapeutic outcomes, and decreased galantamine dose; thus lower production cost.

- The faculty of Dentistry sent an aid convoy teemed with dental personnel and supplies, to Al Hadayah Nursing Home on Wednesday, 26 February 2020. The PUA dental staff examined more than 100 male and female patients of the residents of the nursing home and provided them with free of charge treatment. The PUA dentists also gave the residents some tips of how to take care of their teeth. They also gave them toothpastes and tooth brushes as gifts from the faculty of Dentistry.

<https://www.pua.edu.eg/a-medical-aid-convoy-to-al-hadayah-nursing-home/>



- The faculty of Pharmacy and Drug Manufacturing launched a campaign to raise awareness about vitamin D on Tuesday, 10 December 2019 in the foyer of the faculty. This was held in cooperation with the faculty scientific committee. During the campaign, a number of leaflets that had many information about Vitamin D and its importance, were distributed. A group of the faculty students also introduced the faculty administrative staff and students of different faculties to the importance of Vitamin D, how to monitor its level in the body, the symptoms of its deficiency and the risks of increasing in its level in the body.

<https://www.pua.edu.eg/why-do-you-need-vitamin-d/>



- The faculty of Pharmacy and Drug Manufacturing organized a field trip to El Miri Hospital for the fourth-year students. The aim of the trip was to introduce the students to the clinical pharmacy applications in the hospital. The students visited the oncology department where chemotherapy drugs are prepared for patients, the radiotherapy department, the dialysis unit and the Total Parenteral Nutrition (TPN) Unit. The supervisors of these departments explained the role of hospital pharmacist in different departments and the procedures followed to ensure the quality of pharmacy services as well as the preventive measures to ensure occupational health in different departments.



<https://www.pua.edu.eg/a-field-trip-to-el-miri-hospital/>

- The faculty of Physical Therapy organized a trip to the National Institute of Neuromotor System on Thursday, 19 December 2019. The trip aimed to provide the students with the opportunity to identify different cases of mobility impairment, how to treat and follow them up. Firstly, the students took a tour in the institute to visit the neurological rehabilitation unit, the orthopedic unit and the pediatrics unit. Then, they went to the physical therapy building and visited the hydrotherapy department; a section which the institute is distinguished by all over Egypt. At the end of this tour, the students were introduced to the Splints and Artificial Limbs Factory and their different manufacturing phases.



<https://www.pua.edu.eg/a-trip-to-the-national-institute-of-neuromotor-system/>

- The faculty of Physical Therapy, in cooperation with Sonaa Al-Hayat student club, organized a visit to Mohamed Ragab Nursing Home on Tuesday, 10 December 2019. The students spent quality time with the residents and did many activities with them. At the end of the visit, the students distributed gifts, including mus'hafs, rosaries and decorated colored cups.

<https://www.pua.edu.eg/a-visit-to-mohamed-ragab-nursing-home/>



- The Faculty of Applied Health Sciences Technology organized a field trip for the students of the third and fourth year classes to El Shatby University Hospital for Children. This was held on Wednesday, 26 February 2020. During the visit, Associate Prof. Maha Youssef, the Head of the Hematology Unit escorted the delegation in a tour around the hospital different departments, including the Endocrinology Department, the Gastroenterology Department, the Hematology Department, the Dialysis Unit and the Reception. At the end of the visit, the delegation visited the university blood bank where the students were acquainted with the blood transfusion process, the apheresis



technology and the apparatus used in it.

<https://www.pua.edu.eg/a-field-trip-to-el-shatby-university-hospital-for-children/>

- The Faculty of Applied Health Sciences Technology organized a campaign to raise the awareness of the faculty students about vitamin (D) deficiency on Tuesday, 10 March 2020. The campaign shed light on the importance of vitamin (D), its nutritional sources, the causes of its deficiency and deficiency tests. During the campaign, food and drinks rich with vitamin (D) were distributed.  
<https://www.pua.edu.eg/raising-awareness-of-vitamin-d-deficiency/>



- The faculty of Tourism and Hotel Management made a video in Spanish for giving moral support to coronavirus patients in Egypt and Spain and urging them to stay home. A session was held on Saturday, 25 April 2020 to display the video which is considered a practical application of the course of "Spanish as a Second Language".  
<https://www.pua.edu.eg/a-video-for-supporting-coronavirus-patients-in-egypt-and-spain/>  
Video link: [https://www.youtube.com/watch?reload=9&v=02UstHuHs&feature=emb\\_title](https://www.youtube.com/watch?reload=9&v=02UstHuHs&feature=emb_title)
- The faculty of mass communication produces a short film on a film called " Devetsia" demonstrating the environmental resources on land, water resources, desert ecosystem services regarding natural health treatments, and ecotourism in sustainable cities.
- <https://www.youtube.com/watch?v=sQrc2ufKFC4&list=PLsZ1HNiwxSAPBp9Ff74mHK1NbRVL Cp-52&index=2>

### 3.3. MOUS with hospitals for Students' Training :

- In 2019, the faculty of Pharmacy have signed several MOUS for cooperation between Pharos University and hospitals and pharmaceutical companies in Egypt with the aim of students training for the completion of their graduation these hospitals are:

Hospital Name with signed agreements	No of students	Company name	No of students
Mostafa Kamel Hospital	102	Pharco company	20
Alexandria University Hospital	102	Egyptian Pharmaceutical Company	16
Ras El Tin Hospital	71	El Burg for pharmaceutical industrial	15
Ministry of health hospitals	41	Seif Pharma	15
El Salama Hospital	40		
57357 Hospital Cairo	20		
57357 Hospital Tanta	71		
Tanta Center for cancer	10		
International center for	10		

Cardiology (ICC)			
Alexandria Vascular center AVC	10		
San Mary Hospital- Alex	12		
Zamzam Hospital - Alex	2		

### 3.4. Cooperation in Health Sector: Cooperation with Hospitals, NGOs and Private sector

- Pharos University cooperates with governmental and private national hospitals that belongs to the Ministry of Health in Alexandria and Beheria governorates. Training of students of the faculties of Pharmacy, dentistry, Applied health sciences and technology , and physical therapy are held in such hospitals.

List of governmental and Private hospitals in Alexandria and Beheria Governorates that cooperated with Pharos University for t students' raining and internships

Hospital Name	Purpose
Armed Forces Hospital- Mustafa Kamel	Internships
Naval Forces Hospital	Internships
General Military Hospital	Internships
Institute of Medical research hospital	Training and internships
Faculty of Medicine Hospital of Alexandria University	Training and research
America Hospital	Training
Ahmed Maher Hospital	Students Projects
Abou Kir Hospital	Training
Gomhoria Hospital	Training
El Qasr El Ainy Hospital	Training
Dekernis Hospital	Training
Police Hospital	Training
Abou Homous Hospital	Training
Wenget Hospital	Training
El Menshawy Hospital	Training
57375 Hostital	Students activities
Burg El Arab Hospital	Students activities

- Cooperation with Ministers and governmental agencies  
Pharos university cooperates with ministries and national directorates in the health

**List of Ministries and National Directorates in the health sector that Pharos University cooperated with for implementing Students' community projects.**

Institute of Cultural Affairs	Students Projects
Education Directorate – Alexandria Governorate, Ministry of education	Community service projects
Education Directorate – Beheria Governorate, Ministry of education	Community service projects
Health Directorate – Ministry of Health	Community service projects

Cairo University	Research
Alexandria University	Research
Al Azhar University	Research Project
Menia University	Research Project
Academy of Science and Technology	Research Project
High Institute of Public Health	Research Project

**- Cooperation with NGOs**

Pharos University cooperates with NGOs for implementing Students' community projects. Below is the List of NGOs that Pharos University Cooperates with for Community Service Projects

Egyptian Network for Research Ethics Committees	Research Project
Naba'a Al Hayat Foundation	Community service projects
Mojeeb Al Salayen Foundation	Community service projects
Al Staqrar Foundation	Community service projects
Kafalat Al Yateem Foundation at Fata neighborhood	Community service projects
Al Qalaa for Community Development.	Community service projects
Eleen ElGaria association	Community service projects
Abdel Kadr Association	Community service projects
Tarek Charity Association (Mustafa Kamel)	Community service projects
Abu Masoud Suburb (Amiria)	Community service projects
Ayadi Mostakbal medical center (NGO)	Training
Omda Development Association (NGO)	Students Projects
Association of community based rehabilitation for disabled children (NGO)	Students Projects
Red Crescent Association (Mohandeseen)	

**- Cooperation with Private sector**

Private sector is an important sector that Pharos university is keen to cooperate with for different purposes, mainly for meeting, conferences and workshops. Such meetings allow the recognition of new trends in the local and regional market, and allow meeting the market needs. Below is the List of private sectors That Pharos University Cooperates with

Company name	Type of cooperation
Eva Pharma	Participation in Conference
Innova Pharma	Participation in Conference
Hygint Pharmaceutical company Ltd.	Participation in Conference
Goweily Academy	Workshops
Andalusia Hospital (Private Hospital)	Students activities
El Yousr Hospital (private Hospital)	Students Projects
Fawzy Moaaz Hospital (Private Hospital)	

**- International Cooperation in the field of Health:**

Pharos University received a high-ranking delegation of the *KTH Royal Institute of Technology* on Thursday, 26 September 2019. The delegation was comprised of Prof. Stefan Ostlund, the Vice President for Global Relations at the KTH Royal Institute of Technology and Prof. Albania Nissan, the KTH-PUA Joint Program Leader. The visit included meetings with the aim of establishing cooperation between the

two parties in the field of Pharmacy. Prof. Stefan Ostlund praised the research concerning facilities at the faculty of Pharmacy and Drug Manufacturing and gave approval to start cooperation in the field of research between the faculty and the KTH Institute. is the list of International MOUs established with European universities in the health sector.

<https://www.pua.edu.eg/a-kth-high-ranking-delegation-in-a-visit-to-pharos-university/>

List of International MOUs established with European Universities in the Health sector.

Dentistry	The University of Naples Federico II, Italy
Pharmacy	Aston University, Birmingham, UK
	Kingston University, London, UK
	The University of Naples Federico II, Italy KTH Royal Institute of Technology
	JAMK University f Applied Sciences
	School of Pharmacy, University of Eastern Finland
	AUF)Agence Universitaire de la francophonie
	Kingston University
	Aston University
Physical therapy	Goethe' University , Frankfurt, Germany

### 3.5. Clinics

#### - The Faculty of Dentistry clinics

The Faculty of Dentistry has 7 clinics to serve the treatment of patents all are located in the first and ground floors to make accessible to patients. <https://www.pua.edu.eg/faculty-of-dentistry/dental-clinic/>. These clinics include the Comprehensive Care Case (CCC) which is open for students and public. The CCC program started since 2014 under the supervision of the faculty dean and is considered the graduation project of the senior students; where each 2 students work together on a single patient treating him/her from the start till the end under the supervision of the professors of different departments. Through this program, senior students acquire the knowledge, skills, and a widen horizon to make a comprehensive treatment plan for any patient with vision, confidence, and skill. Also this program is contributing in community service for all the disadvantaged patients mainly those who are unable to pay. The actual cost of treatment of each individual case is ranging from a Minimum of 30,000 L.E to a Maximum of 100,000 L.E. but through this Program; these patients are receiving an excellent treatment totally Free of charge. Since the start of this program 500 cases were given a complete dental care for free. The pictires below shows some results before and after treatment of CCC







- [This service is provided free for dental treatment. Below is a summary of the number of patients that were treated in the academic year 2019](#)
- [Patients visiting the dental clinic of PUA during the Academic year 2019-2020](#)

month	New patients	Follow-up patients	CCC treatment	Total
8/2019	0	582	1427	2009
9/2019	114	339	970	1411
10/2019	923	1043	1527	3418
11/2019	779	910	1756	3445
12/2019	1995	1335	4119	7499
1/2020	463	74	426	963
2/2020	1136	708	649	2493
3/2020	677	1046	1413	3162
8/2020	0	0	373	373
Total	6087	6038	12660	24773

- The average patients /month = 2752.5
- [Outpatients clinics for postgraduates' studies](#)

Month	No. of cases	Number of new cases	total
8/2019	16	6	22
9/2019	9	20	29
10/2019	24	12	36
11/2019	16	7	23
12/2019	13	16	29
1/2020	10	5	15
2/2020	9	6	15
3/2020	4	5	8
Total	101	77	177

- The average patients /month = 22.12
- [Operations and Procedures](#)

Month	PUA Cases	Private cases	Total
8/2019	-	6	6
9/2019	2	17	19
10/2019	-	8	8

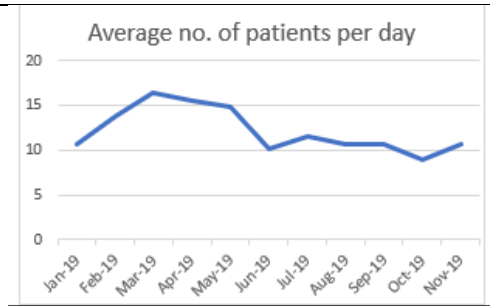
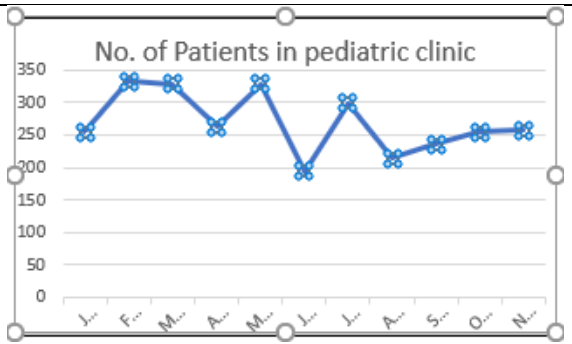
11/2019	2	5	7
12/2019	3	16	19
1/2020	4	4	8
2/2020	2	5	7
3/2020	-	3	3
Total	13	64	77

- The average number of operations and procedures/month= 9.6

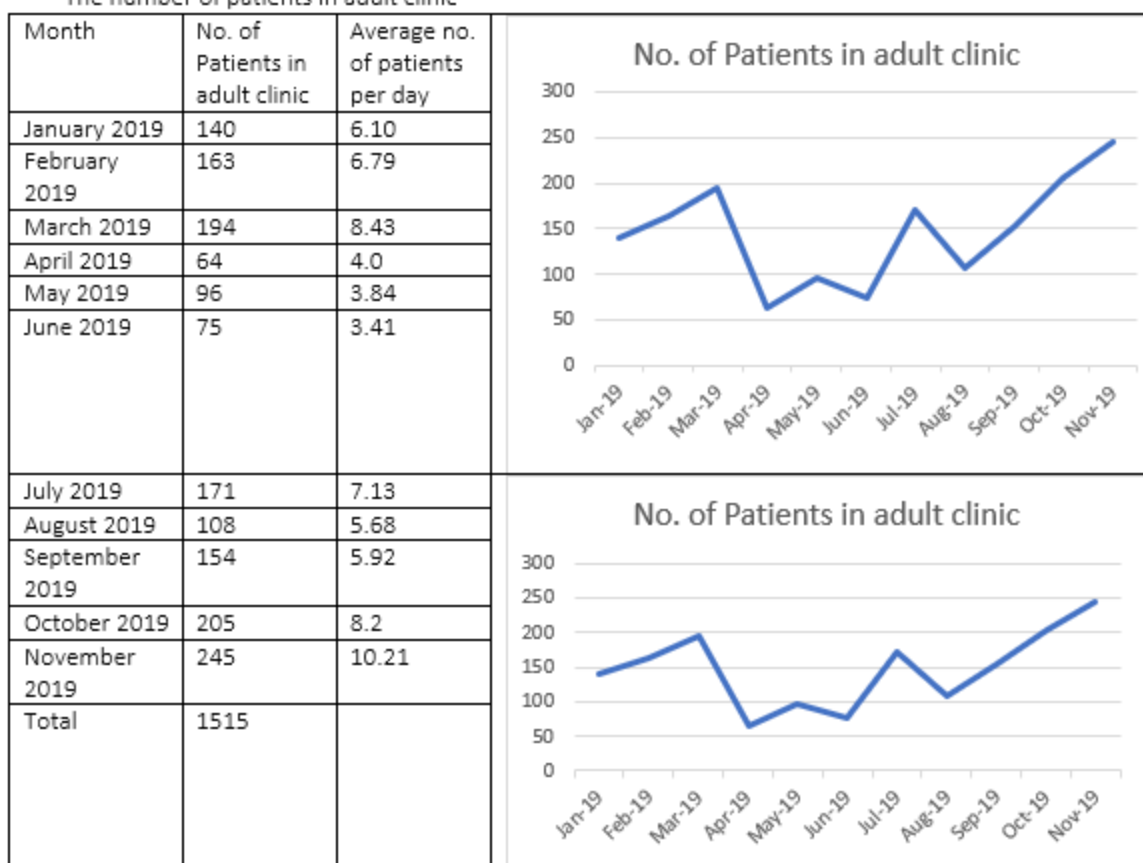
- **The faculty of Physical therapy Clinics**

. The number of children patients in the academic year 2019-2020

Month	No. of Patients in pediatric clinic	Average no. of patients per day
January 2019	255	10.63
February 2019	332	13.83
March 2019	329	16.45
April 2019	263	15.47
May 2019	328	14.92
June 2019	194	10.21
July 2019	299	11.50
August 2019	214	10.70
September 2019	236	10.73
October 2019	255	9
November 2019	257	10.71
Total	2962	



The number of patients in adult clinic



The Faculty of Applied Health Sciences Technology provides the community with highly qualified specialists in different vital medical fields including nutrition, nursing and technologies of medical laboratories, medical equipment, radiology & medical imaging, optics, anesthesia & intensive care, and prosthodontic. Its facilities is provided in the link below.

<https://www.pua.edu.eg/allied-medical-sciences/facilities/>

### 3.6. International mobilities

In the light of the academic staff exchange agreement held between Pharos University and the University of Eastern Finland, Dr. Samar El Ganainey, Dr. Mohamed Gamal Bekhiet and Dr. Mennatallah Ismail were awarded Erasmus+ scholarships funded by the European Union to be apprised of the latest developments in the realms of pharmacy and drug manufacturing, namely the state-of-the-art methods in teaching and scientific research

Name	Title	Faculty- PUA	Host university	Travel Dates
Samar ossama El-ganainy	Lecturer	Faculty of Pharmacy Pharmacology & Therapeutics Department	University of Eastern Finland (Finland).	24 April 2019 to 3 May 2019

Mennatallah Ahmed Ismail Ali	Lecturer	Faculty of Pharmacy Pharmacology & Therapeutics Department	University of Eastern Finland (Finland).	24 April 2019 to 3 May 2019
Mohamed Gamal Bekhit	PhD student	Faculty of Pharmacy Pharmaceutical Chemistry Department	University of Eastern Finland (Finland).	1 March 2019 To 31 May 2019



<https://www.pua.edu.eg/erasmus-scholarships-for-the-researchers-of-the-faculty-of-pharmacy-and-drug-manufacturing/>

#### - International Cooperation in the field of Health:

Pharos University received a high-ranking delegation of the *KTH Royal Institute of Technology* on Thursday, 26 September 2019. The delegation was comprised of Prof. Stefan Ostlund, the Vice President for Global Relations at the KTH Royal Institute of Technology and Prof. Albania Nissan, the KTH-PUA Joint Program Leader. The visit included meetings with the aim of establishing cooperation between the two parties in the field of Pharmacy. Prof. Stefan Ostlund praised the research concerning facilities at the faculty of Pharmacy and Drug Manufacturing and gave approval to start cooperation in the field of research between the faculty and the KTH Institute. Table 12 is the list of International MOUs established with European universities in the health sector.

<https://www.pua.edu.eg/a-kth-high-ranking-delegation-in-a-visit-to-pharos-university/>

Table 12. List of International MOUs established with European Universities in the Health sector.

Dentistry	The University of Naples Federico II, Italy
Pharmacy	Aston University, Birmingham, UK
	Kingston University, London, UK
	The University of Naples Federico II, Italy
	KTH Royal Institute of Technology
	JAMK University of Applied Sciences
	School of Pharmacy,

	University of Eastern Finland
	AUF)Agence Universitaire de la francophonie
	Kingston University
	Aston University
Physical therapy	Goethe' University , Frankfurt, Germany

### 3.7. Students' projects

Students of Pharos university were keen to share the SDG3 activities with their Bachelor Project as follows:

Project name	Summary
1. Smart health kit	(SDG 3) Ensure healthy lives and promote well-being for all at all ages. there is a need to provide e-Health services and there is a need for a comprehensive e-Health system that integrates patients, doctors, hospitals, and ambulances. In this project we developed a connected e-Health system that meets the end-to-end requirements especially for elderly people. The system can monitor the user via some sensors and notify the caring physician or call an ambulance in emergency situations. The system uses a special triggering algorithm in order to identify the appropriate action based on the sensed data and the age of the patient.

The Students of the Faculty of dentistry submitted their projects for the academic year 2019-2020, in the following Topics

Topic name
Prevalence of tobacco consumption among pharos university students
In vitro efficacy of cinnamaldehyde on streptococcus mutans strains compared to chlorhexidine
The antimicrobial effect of eugenol on lactobacilli species isolated from children saliva compared to chlorhexidine (in vitro study)
The effect of miswak and flouride toothpastes on streptococcus mutans, a comparative microbiological study .
Comparison of the antimicrobial effect of garlic with lime and chlorhexidine mouth rinses against Streptococcus Sobrinus in children (in-vitro study)
The effect of curcumin and acacia nilotica extract on the healing of oral ulcers
A comprehensive dental health program among orphanage's children in Alexandria: assessment of their oral health status
Topical application of aloe vera and vitamin E on the induced ulcer on the tongue of rats :clinical and histological evaluation. Randomized controlled experimental study
Effect of curcumin on oral mucosa of diabetic rats
Effect of Smoking on Oral Mucosa (Cytological study)
Effect of diabetes on the tongue and buccal mucosa
Prevalence of oral habits in a group of children aged 6-12 years in Alexandria
The anti-bacterial and physical properties of soft liners containing propolis (in vitro study )
patient's perception of treatment outcomes and quality of life following implant treatment and conventional prosthodontic appliance .
Effect of cocos nucifera (coconut oil) incorporated into tissue conditioner on its tensile strength and anti fungal activity
Body mass index and dental caries experience among school children in Alexandria, EGYPT
Occupational hazards among dentists in alexandria
Knowledge, attitude and practice regarding tobacco cessation among health care professionals
Effect of education program on oral health among visually impaired patient
Antibacterial effectiveness of probiotic based on experimental against cariogenic bacteria "streptococcus mutans" and salivary parameters
Effect of garden cress in healing socket after extraction in rats
Effect of curcumin on alveolar bone healing in rats

### 3.8 Research Publications d collaboration in the health sector

1	<b>A Novel Morphological Analysis of DXA-DICOM Images by Artificial Neural Networks for Estimating Bone Mineral Density in Health and Disease</b>
	Mohamed, E.I., Meshref, R.A., Abdel-Mageed, S.M., Moustafa, M.H., Badawi, M.I., Darwish, S.H.
	Collaboration with Alexandria University
2	<b>Co-targeting of endothelin-A and vitamin D receptors: a novel strategy to ameliorate cisplatin-induced nephrotoxicity</b>
	Abdel Moneim, L.M., Helmy, M.W., El-Abhar, H.S
	Collaboration with Cairo University
3	<b>Effect of using zirconia and metallic bar attachment overdentures on the supporting structures of mandibular edentulous ridge area (Randomized control trial)</b> <b>(2019) Indian Journal of Public Health Research and Development, 10 (9), pp. 1150-1155. 20)</b>
	Debis, M.Z., Badr, A.I., Agamy, E.M., Mohamed, G.F.
	Collaboration with Minia University
4	<b>Opportunistic parasitoses among Egyptian hemodialysis patients in relation to CD4+ T-cell counts: A comparative study</b>
	Shehata, A.I., Hassanein, F., Abdul-Ghani, R.
	Collaboration with Alexandria University, and Sanaa University
5	<b>Role of TGF-<math>\beta</math>1 and C-Kit Mutations in the Development of Hepatocellular Carcinoma in Hepatitis C Virus-Infected Patients: in vitro Study</b>
	El-Houseini, M.E., Ismail, A., Abdelaal, A.A., El-Habashy, A.H., Abdallah, Z.F., Mohamed, M.Z., El-Hadidi, M., Cho, W.C.S., Ahmed, H., Al-Shafie, T.A.
	Collaboration with Kowloon Hong Kong China, Queen Elizabeth Hospital, GlycoMantra, Cairo University, Ain Shams University
6	<b>Synthesis and biological evaluation of purine-pyrazole hybrids incorporating thiazole, thiazolidinone or rhodanine moiety as 15-LOX inhibitors endowed with anticancer and antioxidant potential</b>
	Afifi, O.S., Shaaban, O.G., Abd El Razik, H.A., Shams El-Dine, S.E.-D.A., Ashour, F.A., El-Tombary,
	Collaboration with City of Scientific Research and Technological Applications, and Alexandria University
7	<b>Synthesis and molecular docking study of some 3,4-dihydrothieno[2,3-d]pyrimidine derivatives as potential antimicrobial agents</b>
	Shaaban, O.G., Issa, D.A.E., El-Tombary, A.A., Abd El Wahab, S.M., Abdel Wahab, A.E., Abdelwahab, I.A.
8	<b>Professional boundaries.</b>
	Elnaem, M.H., Hamdy, N.A.

	Collaboration with INTERNATIONAL ISLAMIC Institute of Malaysia
9	<b>Shooting three inflammatory targets with a single bullet: Novel multi-targeting anti-inflammatory glitazones</b> (2019) <i>European Journal of Medicinal Chemistry</i> , 167, pp. 562-582. Cited 5 times.
	Elzahhar, P.A., Alaaeddine, R., Ibrahim, T.M., Nassra, R., Ismail, A., Chua, B.S.K., Frkic, R.L., Bruning, J.B., Wallner, N., Knape, T., von Knethen, A., Labib, H., El-Yazbi, A.F, Belal, A.S.F.
	Collaboration with Alexandria university, American University of Beirut, Beirut, Lebanon, The University of Adelaide, Adelaide, South Australia, Fraunhofer Institute for Molecular Biology and , Faculty of Medicine, Goethe-University Applied Ecology
10	<b>A combined treatment of curcumin, piperine, and taurine alters the circulating levels of IL-10 and miR-21 in hepatocellular carcinoma patients: A pilot study</b>
	Hatab, H.M., Abdel Hamid, F.F., Soliman, A.F., Al-Shafie, T.A., Ismail, Y.M., El-Houseini, M.E.
	Collaboration with Ain Shams university , Cairo university
11	<b>A new design for a chronological release profile of etodolac from coated bilayer tablets: In-vitro and in-vivo assessment.</b>
	Georgy, K.R., Farid, R.M., Latif, R., Bendas, E.R.
	Collaboration with Future university, Cairo university
12	<b>A novel investigation of statins myotoxic mechanism: effect of atorvastatin on respiratory muscles in ypoxic environment</b>
	El-Ganainy, S.O., El-Mallah, A., Abdallah, D., Khattab, M.M., El-Khatib, A.S., Mohy El-Din, M.M.
	Collaboration with Alexandria University, Cairo University
13	<b>A novel voltammetry offline coupled MALDI/TOF MS characterization of electrochemical reaction products and the voltammetric determination of febuxostat in human plasma</b>
	El-Yazbi, F.A., Amin, O.A., Bakry, R., Khamis, E.F., El-Kimary, E.I., Younis, S.E.
	Collaboration with University of Innsbruck, Alexandria University
14	<b>An Initial Demonstration of Polyester Monomer Coordination Properties: Synthesis and Biological Activity of Metal Complexes Derived from a New Nanosized Diol</b>
	Elhusseiny, A.F., Hussien, H.M., Hassan, H.H.A.M.
	Collaboration with Alexandria University
15	<b>Anionic versus cationic bilosomes as oral nanocarriers for enhanced delivery of the hydrophilic drug</b> Terms and conditions Privacy policy
	Elnaggar, Y.S.R., Omran, S., Hazzah, H.A., Abdallah, O.Y
	Collaboration with Alexandria University
1	<b>Assessment of Osteoimmunological Changes Following Orthognathic Surgery</b>

6	<b>Soliman, S., Dehis, M., Ahmed, M., Kateeb, E.E.L.</b>
	Pharos University
1 7	<b>Astrocyte-Targeted Transporter-Utilizing Derivatives of Ferulic Acid Can Have Multifunctional Effects Ameliorating Inflammation and Oxidative Stress in the Brain</b>
	<b>Ahmed Montaser,<sup>1</sup> Johanna Huttunen,<sup>1</sup> Sherihan Abdelhamid Ibrahim,<sup>2</sup> and Kristiina M. Huttunen</b>
	Collaboration with Eastern Finland
1 8	<b>Clarithromycin resistance and genetic pattern of helicobacter pylori in a group of patients with peptic ulcer disease in alexandria, Egypt</b>
	<b>Alhammad, M.A., El-Kady, H., Hamed, Y.</b>
	Collaboration with Universiti Teknologi PETRONAS, Alexandria university , Benghazi University
1 9	<b>Clarithromycin resistance and genetic pattern of helicobacter pylori in a group of patients with peptic ulcer disease in alexandria, Egypt</b>
	<b>Alhammad, M.A., El-Kady, H., Hamed, Y.</b>
	Collaboration with American University of Beirut, Alexandria university
2 0	<b>Comparison of remineralization by fluoride varnishes with and without casein phosphopeptide amorphous calcium phosphate in primary teeth</b>
	<b>64) Salman, N.R., ElTekeya, M., Bakry, N., Omar, S.S., El Tantawi, M.</b>
	Collaboration with Alexandria University
2 1	<b>Comparison of the effects of short-duration wrist joint splinting combined with physical therapy and physical therapy alone on the management of patients with lateral epicondylitis.</b>
	<b>Kachanathu, S.J., Alenazi, A.M., Hafez, A.R., Algarni, A.D., Alsubiheen, A.M.</b>
	Collaboration with Prince Sattam bin Abdulaziz University ,King Saud university
2 2	<b>Controlled release Ibu-cryobarriers for the prevention of post-operative adhesions: In-vitro/in-vivo comparative study</b>
	<b>Ezzat, H.M., Elnaggar, Y.S.R., Abdallah, O.Y.</b>
	Collaboration with Alexandria university
2 3	<b>Correlation study of functional performance between diabetic and non-diabetic patients with knee osteoarthritis</b>
	<b>Hamed, A.M., Aboeleinen, M.H., Abdelgawad, H.A., Aboelazm, S.N</b>
	Collaboration with Misr International University
2 4	<b>Current strategies for different paclitaxel-loaded Nano-delivery Systems towards therapeutic applications for ovarian carcinoma: A review article</b>
	<b>Khalifa, A.M., Elsheikh, M.A., Khalifa, A.M., Elnaggar, Y.S.R</b>



	Collaboration with Alexandria University
<b>25</b>	<b>Dental management of a child with ectrodactyly ectodermal dysplasia cleft lip/palate syndrome: A case report</b>
	<b>Elhamouly, Y., Dowidar, K.M.L.</b>
	Collaboration with Alexandria University
<b>26</b>	<b>Design, synthesis and biological evaluation of novel <math>\alpha</math>-acyloxy carboxamides via Passerini reaction as caspase 3/7 activators</b>
	<b>Salah Ayoup, M., Wahby, Y., Abdel-Hamid, H., Ramadan, E.S., Teleb, M., Abu-Serie, M.M., Noby, A.</b>
	Collaboraton with Alexandria University, City of Scientific Research and Technological Applications
<b>27</b>	<b>Design, synthesis and pharmacological evaluation of some substituted dihydropyrimidines with L-/T-type calcium channel blocking activities</b>
	<b>Teleb, M., Rizk, O.H., Zhang, F.-X., Fronczek, F.R., Zamponi, G.W., Fahmy, H.</b>
	Collaboration with Institute, University of Calgary, Alexandria University, South Dakota State University
<b>28</b>	<b>Diosmin Nanocrystal–Loaded Wafers for Treatment of Diabetic Ulcer: In Vitro and In Vivo Evaluation</b>
	<b>Atia, N.M., Hazzah, H.A., Gaafar, P.M.E., Abdallah, O.Y.</b>
	Collaboration with Alexandria University, Arab Academy for Science, Technology and Maritime Transport
<b>29</b>	<b>Dual VEGFR-2/PIM-1 kinase inhibition towards surmounting the resistance to antiangiogenic agents via hybrid pyridine and thienopyridine-based scaffolds: Design, synthesis and biological evaluation (2019) Bioorganic Chemistry, 92, art. no. 103189, .</b>
	<b>Rizk, O.H., Teleb, M., Abu-Serie, M.M., Shaaban, O.G.</b>
	Collaboration with Alexandria University
<b>30</b>	<b>Eco-Friendly Tadalafil Surfactant-Free Dry Emulsion Tablets (SFDETs) Stabilized by In Situ Self-Assembled Aggregates of Natural Oil and Native Cyclodextrins</b>
	<b>Badr-Eldin, S.M., Labib, G.S., Aburahma, M.H.</b>
	Collaboration with Alexandria University, King Abdulaziz University
<b>31</b>	<b>Effect of local administration of simvastatin on orthodontic tooth movement in rabbits</b>
	<b>AlSwafeeri, H., ElKenany, W., Mowafy, M., Karam, S.</b>
	Collaboration with Alexandria University
<b>32</b>	<b>Effect of using distal extension bar on the posterior ridge area in implant supported mandibular overdentures</b>
	<b>Abdel Hamid, S.M., Hamzawi, A.G., Agamy, E.M., Mohamed, G.F</b>
	Collaboration with Minia University

3 3	<b>Effect of visceral decongestion of true pelvis on primary dysmenorrhea</b>
	<b>Atef, A.M., Awad, M.A., Emara, H.M., Kamel, H.E.D.H.</b>
	Collaboration with Alexandria University
3 4	<b>Emergence of bla<sub>TEM</sub> and bla<sub>SHV</sub> among VIM-producing Pseudomonas aeruginosa clinical isolates in Alexandria, Egypt</b>
	<b>Gaballah, A., Elbaradei, A., Elsheredy, A., Kader, O.</b>
	Collaboration with Alexandria University
3 5	<b>Enhanced production of di-(2-ethylhexyl) phthalate (DEHP) by Bacillus subtilis AD35 using response surface methodology (RSM)</b>
	<b>Lotfy, W.A., Hassan, S.W.M., Abd El-Aal, A.A., Ghanem, K.M.</b>
	Collaboration with Alexandria University, and National Institute of Oceanography and Fisheries
3 6	<b>Evaluating the therapeutic potential of one-carbon donors in nonalcoholic fatty liver disease</b>
	<b>Bakir, M.B., Salama, M.A., Refaat, R., Ali, M.A., Khalifa, E.A., Kamel, M.A.</b>
	Collaboration with Alexandria University
3 7	<b>Formulation strategies for achieving high delivery efficiency of thymoquinone-containing Nigella sativa extract to the colon based on oral alginate microcapsules for treatment of inflammatory bowel disease</b>
	<b>Samak, Y.O., Santhanes, D., El-Massik, M.A., Coombes, A.G.A.</b>
	Collaboration with Queensland university, Monash university, Queen Elizabeth university
3 8	<b>Improved oral bioavailability of the anticancer drug catechin using chitosomes: Design, in-vitro appraisal and in-vivo studies</b>
	<b>Ezzat, H.M., Elnaggar, Y.S.R., Abdallah, O.Y.</b>
	Collaboration with Alexandria university
3 9	<b>Improving hepatic mitochondrial biogenesis as a postulated mechanism for the antidiabetic effect of spirulina platensis in comparison with metformin (2019) Applied Physiology,</b>
	<b>Oriquat, G.A., Ali, M.A., Mahmoud, S.A., Eid, R.M.H.M., Hassan, R., Kamel, M.A.</b>
	Collaboration with Amman university, Alexandria university , Aswan university
4 0	<b>Insights on the use of nanocarriers for acne alleviation (2019) Current Drug Delivery, 16 (1), pp. 18-25. Cited 11 times.</b>
	<b>Amer, S.S., Nasr, M., Mamdouh, W., Sammour, O.</b>

	Collaboration with Alexandria University
<b>4 1</b>	<b>Lecithin Microemulsion Lipogels Versus Conventional Gels for Skin Targeting of Terconazole: In Vitro, Ex Vivo, and In Vivo Investigation</b>
	<b>Talaat, S.M., Elnaggar, Y.S.R., Abdalla, O.Y.</b>
	Collaboration with Alexandria University
<b>4 2</b>	<b>Liquid Chromatography-Mass Spectrometry for muconic, mandelic, hippuric and methylhippuric acids analysis in human urine as metabolites for fuel exposure</b>
	<b>Belal, S.F., Shaalan, R.A., Ragab, M.A.A., El-Attar, E.A., Agami, M.</b>
	Collaboration with Alexandria University
<b>4 3</b>	<b>Maxillary sinus floor elevation using hydroxyapatite nano particles vs tenting technique with simultaneous implant placement: A randomized clinical trial</b>
	<b>Khaled, H., Atef, M., Hakam, M.</b>
	Collaboration with Cairo University
<b>4 4</b>	<b>Mechanistic role of cAMP and hepatocyte growth factor signaling in thioacetamide-induced nephrotoxicity: Unraveling the role of platelet rich plasma</b>
	<b>Keshk, W.A., Zahran, S.M.</b>
	Collaboration with Tanta University
<b>4 5</b>	<b>Mesoporous silica nanoparticles, a safe option for silymarin delivery: preparation, characterization, and in vivo evaluation</b>
	<b>Nasr, S.S., Nasra, M.M.A., Hazzah, H.A., Abdallah, O.Y.</b>
	Collaboration with Alexandria University
<b>4 6</b>	<b>Micro- and nanotechnology approaches to improve Parkinson's disease therapy</b>
	<b>Torres-Ortega, P.V., Saludas, L., Hanafy, A.S., Garbayo, E., Blanco-Prieto, M.J.</b>
	Collaboration with Universidad de Navarra, Instituto de Investigación Sanitaria de Navarra
<b>4 7</b>	<b>Reviewing two decades of nanomedicine implementations in targeted treatment and diagnosis of pancreatic cancer: An emphasis on state of art</b>
	<b>El-Zahaby, S.A., Elnaggar, Y.S.R., Abdallah, O.Y.</b>
	Collaboration with Alexandria University
<b>5 0</b>	<b>Robust Chromatographic Methods for the Analysis of Two Quaternary Mixtures Containing Paracetamol, Codeine, Guaifenesin and Pseudoephedrine or Phenylephrine in their Dosage Forms (2019) Journal of Chromatographic Science, 57 (9), pp. 828-837.</b>
	<b>El-Kimary, E.I., Khamis, E.F., Belal, S.F., Abdel Moneim, M.M</b>
	Collaboration with Alexandria University

5 1	<b>Simple mix-and-read assays for the determination of baclofen in pharmaceutical formulation</b>
	<b>El-Yazbi, A.F., Guirguis, K.M., Bedair, M.M., Belal, T.S.</b>
	Collaboration with Alexandria University
5 2	<b>Simultaneous determination of methocarbamol and aspirin in presence of their pharmacopeial-related substances in combined tablets using novel HPLC-DAD method</b>
	<b>El-Yazbi, F.A., Amin, O.A., El-Kimary, E.I., Khamis, E.F., Younis, S.E.</b>
	Collaboration with Alexandria University
5 3	<b>Structurally Diverse Histone Deacetylase Photoreactive Probes: Design, Synthesis, and Photolabeling Studies in Live Cells and Tissue</b>
5 4	<b>Aboukhatwa, S.M., Hanigan, T.W., Taha, T.Y., Neerasa, J., Ranjan, R., El-Bastawissy, E.E., Elkersh, M.A., El-Moselhy, T.F., Frasor, J., Mahmud, N., McLachlan, A., Petukhov, P.A.</b>
	Collaboration with University of Illinois at Chicago , Tanta University, Alexandria University
5 5	<b>Successful treatment of acute experimental toxoplasmosis by spiramycin-loaded chitosan</b>
	<b>Hagras, N.A.-E., Allam, A.F., Farag, H.F., Osman, M.M., Shalaby, T.I., Fawzy Hussein Mogahed, N.M., Tolba, M.M., Shehab, A.Y</b>
	Collaboration with Alexandria University
5 6	<b>Synthesis of hexagonal nanozinc by arc discharge for antibacterial water treatment, (2019) Surface Innovations, 8 (3), pp. 165-171. Cited 1 time, DOI: 10.1680/jsuin.19.00050</b>
	<b>Khalil, A.M., El-Khatib, A.M., El-Khatib, M.</b>
	Collaboration with Alexandria University
5 7	<b>Synthesis of some new C2 substituted dihydropyrimidines and their electrophysiological evaluation as L-/T-type calcium channel blockers</b>
	<b>Teleb, M., Rizk, O.H., Zhang, F.-X., Fronczek, F.R., Zamponi, G.W., Fahmy, H.</b>
	Collaboration with South Dakota State University, University of Calgary, University of Calgary, Alexandria University
5 8	<b>Synthesis, antibacterial evaluation, and DNA gyrase inhibition profile of some new quinoline hybrids</b>
	<b>Rizk, O.H., Bekhit, M.G., Hazzaa, A.A.B., El-Khawass, E.-S.M., Abdelwahab, I.A.</b>
	Collaboration with Alexandria University
5 9	<b>Telmisartan and captopril ameliorate pregabalin-induced heart failure in rats (2019) Toxicology, 428, art. no. 152310, . Cited 1 time.</b>
	<b>Awwad, Z.M., El-Ganainy, S.O., ElMallah, A.I., Khattab, M.M., El-Khatib, A.S</b>
	Collaboration with Alexandria University and Cairo University

<b>60</b>	<b>The possible antidiabetic effects of vitamin D receptors agonist in rat model of type 2 diabetes</b>
	<b>Abdel-Rehim, W.M., El-Tahan, R.A., El-Tarawy, M.A., Shehata, R.R., Kamel, M.A.</b>
	Collaboration with Alexandria University
<b>61</b>	<b>The role of <math>\alpha 7nAChR</math> in controlling the anti-inflammatory/anti-arthritis action of galantamine</b>
	<b>Gowayed, M.A., Rothe, K., Rossol, M., Attia, A.S., Wagner, U., Baerwald, C., El-Abhar, H.S., Refaat, R.</b>
	Collaboration with University of Leipzig, Germany, Cairo University
<b>62</b>	<b>Torres-Ortega, P.V., Martínez-Valbuena, I., Martí-Andrés, G., Hanafy, A.S., Luquin, M.R.,</b>
	<b>90) Torres-Ortega, P.V., Martínez-Valbuena, I., Martí-Andrés, G., Hanafy, A.S., Luquin, M.R.,</b>
	Collaboration with Universidad de Navarra, universität München, Instituto de Investigación Sanitaria de Navarra, Universidad de Navarra
<b>63</b>	<b>Volatile organic compounds of biofluids for detecting lung cancer by an electronic nose based on artificial neural network</b>
	<b>Mohamed, E.I., Mohamed, M.A., Abdel-Mageed, S.M., Abdel-Mohdy, T.S., Badawi, M.I., Darwish, S.H.</b>
	<b>Alexandria university, October 6 university</b>

### 3.9. Courses in Curricula

Faculty	Course name	Course code	SDG-relevancy	Topic
Applied Health Sciences Technology	Psychology	MGSY-201	3	Mental well being
Applied Health Sciences Technology	Infection Control	MLIC-401	3	Hygiene for good health
Applied Health Sciences Technology	Ethical and Legal Issues in Health Fields	MGME-101	3	Wellbeing and living standards
Pharmacy	Medicinal Chemistry I	(PCD 301) and (PCC 401)	3	diagnostic agents that treat different infections
Pharmacy	Public Health and Preventive Medicine	PMC 401	3	Society health and wellbeing
Pharmacy	Project in Pharmacognosy & Natural Products	PG E08	3	Sustainable use of natural resources
Pharmacy	Nutrition & Health	PL 416	3	Combating malnutrition , Society health and wellbeing

Pharmacy	Public Health	PM 305	3	Society health and wellbeing
Pharmacy	Home Health Care	PN E19	3	Wellbeing of women health at home to reduce inequalities
Pharmacy	First Aid and Basic Life Support (BLS)	PLC 303	3	Society health and wellbeing
Pharmacy	Natural Cosmetics	PGD E01	3	Sustainable use of natural resources
Pharmacy	Herbal medicine	PGD E02	3	Sustainable use of natural resources
Pharmacy	Sustainability in Therapeutics	PLD E03	3	Sustainable use of natural resources
Pharmacy	Medicinal Chemistry II	(PCD 302) and (PCC 403)	3	pharmacological aspects of medicinal and pharmaceutical agents that belong to different categories
Pharmacy	Drug Design	(PCD 401) and (PCC E02)	3	Essentials of pharmaceutical chemistry and metabolism. Development of prodrugs, soft drugs, hard drugs
Pharmacy	Analysis of food & flavours	(PCD E02) and (PCC E03)	3	classification of flavouring agents and chemesthetic compounds found in food, their chemistry and methods of analysis.
Artificial Intelligence	Bioinformatics Programming and Scripting	DS307	3	Medical data handing
Artificial Intelligence	Biomedical Imaging	DS407	3	Medical data handing
Tourism	Current issues in food service (Elective)	HM 336	3	Healthy food for wellbeing, consumption reduction
Tourism	Safe Food Service Management	HM 434	3	Healthy food for wellbeing, consumption reduction
Dentistry	Dental clinic management & infection control	CD 312	3	Human health protection and control of infection in dental clinics
Physical Therapy	Public Health	PTBA 216	3	Good health of society particularly for poor
Physical Therapy	Psychology of Handicapped	PTBA 217	3	Psychic problem and treatment
Physical Therapy	Clinical Psychology	PTBA 337	3	Treatment sessions of Psychic patients
Physical Therapy	Woman Health Physical Therapy	PTWH 446	3	Women health and treatment

## SDG5 Gender equality

Sustainable Development Strategy (Egypt's Vision 2030) entails a strategic vision, which is to provide a high quality education and training system for all, without discrimination. With this vision, students and trainees are provided with the necessary skills to help them think creatively and empower them technically and technologically; and contribute to the development of proud, creative, responsible and competitive citizens who accept diversity and differences, are proud of their country's history, and are eager to build its future and can complete with regional and international entities.

Pharos University is committed to the state Constitution regarding the The place of women, motherhood and childhood. (Article 11, Page 13). According to the national constitution Article 11: The place of women, motherhood and childhood ([http://www.constituteproject.org/constitution/Egypt\\_2014.pdf](http://www.constituteproject.org/constitution/Egypt_2014.pdf)). It states that

- “the state commits to achieving equality between women and men in all civil, political, economic, social, and cultural rights in accordance with the provisions of this Constitution.
- Equality regardless of gender The state commits to taking the necessary measures to ensure appropriate representation of women in the houses of parliament, in the manner specified by law.
- It grants women the right to hold public posts and high management posts in the state, and to appointment in judicial bodies and entities without discrimination. First chamber representation quotas and Second chamber representation quotas
- The state commits to the protection of women against all forms of violence, and ensures women empowerment to reconcile the duties of a woman toward her family and her work requirements.
- The state ensures care and protection and care for motherhood and childhood, and for breadwinning, and elderly women, and women most in need”

Pharos university also believes in what came in the statements of the UN, that providing women and girls has equal access to education, health care, decent work. They fuel sustainable economies and benefit societies and humanity at large.

Since the foundation of Pharos University, there has been an attention given to the gender equality of students.

This is an annual report that provides data on the count of students, postgraduates, staff and assistant staff both full and part time (Part time staff is presented in terms of Full time equivalent (FTE)), as well as employees. These counts are used to monitor gender in Pharos University, and therefore, monitor the number of female each year, in order to keep pace with the international standards and to ensure that there is no gender disparity in women enrolment ratio at all levels. Internal Efficiency of student's ratio at each level is carefully examined to indicate whether there is a significant disparity between male and female students.

All the data presented in this report is supplied by managers of from different department and are analyzed interpreted and presented by the author of this report.



**List of Tables**

<b>Table No.</b>	<b>Caption</b>	<b>Page</b>
Table 1. a	Count of students of the first year 2019-2020 classified as females and males and associated ratio	6
Table 1. b	Gender of students in the first degree in medical sciences and arts and humanities and associated ratio 2019-2020	7
Table 2.	Count of graduates of pharos university for the year 2019-2020classified as males and females per faculty and associated ratio.	8
Table 3.	Count of postgraduate students for the academic year 2019-2020and associated ratio	9
Table 4. a.	Total count of staff members (full time) in each of the 11 faculties classified as males & females and associated ratio 2019-2020	10
Table 4. b.	Total count of assistant staff (full time) in each of the 11 faculties classified as males & females and associated ratio 2019-2020	11
Table 4. c.	Count of adjunct professors (part time) staff members, assistant staff and freelancer members classified as females and males and associated ratio 2019-2020	12
Table 5. a	Count of superior positions - faculties level and associated ratio 2019-2020	13
Table 5. b.	Count of superior positions - university level and associated ratio 2019-2020	14
Table 6	Total count of employees classified as females and males and associated ratio 2019-2020	15
Appendix	Registered Students in the First Academic (freshmen) per Year- 2006-2018	17

## 5.1. Students

With regard to students, Figure 1 below shows the percentage of male and female students at Pharos university students since its start in 2006 till 2019. This Figure shows a fair distribution between make and females in all cases. Data of provide in Appendix 1.

Table 1a show the total number of students enrolled for the first degree in 2018-2019 and Table 1.b. the gender equality estimate of the students of the first degree in medical sciences and arts and humanities



**Figure 1. Percentage of Male and Female Students at Pharos University Students Since Its Start In 2006 Till 2020**

**Table 1 .a The Count of Students of the first year 2018-2019 classified as Females and Males and associated ratio 2019-2020**

Faculty	Females	Males	Total	Ratio Males to females
<b>Pharmacy and Drug Manufacturing</b>	108	121	289	1:0.89
<b>Dentistry</b>	118	149	267	1:0.79
<b>Engineering</b>	91	307	398	1:0.3
<b>Financial and Administrative Sciences</b>	44	85	129	1:0.52
<b>Languages and Translation</b>	188	60	248	1:3
<b>Legal Studies</b>	30	159	189	1:0.2
<b>Tourism and Hotel Management</b>	29	28	57	1:1
<b>Physical Therapy</b>	228	131	359	1:1.7
<b>Mass Communication</b>	147	53	200	1:2.8
<b>Applied health Sciences Technology</b>	4	10	14	1:0.4
<b>Arts and Design</b>	187	66	253	1:2.8
<b>Total</b>	1234	1169	2403	1:1

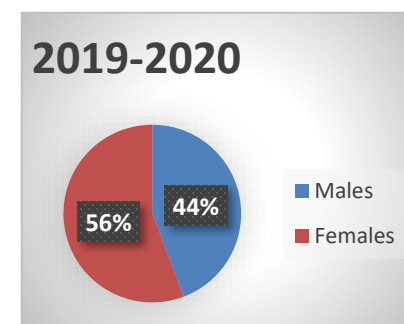


Table 1.B. GENDER OF STUDENTS IN THE FIRST DEGREE IN MEDICAL SCIENCES, STEM AND ARTS AND HUMANITIES AND ASSOCIATED RATIO						
		Females	Males	Total		
	<b>Medical Studies</b>				<p><b>Medical Sciences (First degree Students)...</b></p> <p>56% 44%</p> <p>■ Males ■ Females</p>	
	Pharmacy	168	121	289		
	Dentistry	118	149	267		
	Physical Therapy	228	131	359		
	Applied health Sciences Technology	4	10	14		
Total		518	411	929	1:1.26	
TOTAL	<b>STEM STUDENTS</b>	91	307	398	<p><b>Stem Students First degree 2019-2020</b></p> <p>23% 77%</p> <p>■ Males ■ Females</p>	1:0.3
	<b>Art/ Humanity + Social Studies</b>	<b>Females</b>	<b>Males</b>	<b>Total</b>		
	Financial and Administrative Sciences	44	85	129	<p><b>Arts and Humanities + Social Sciences Students of the first...</b></p> <p>58% 42%</p> <p>■ Males ■ Females</p>	
	Languages and Translation	188	60	248		
	Legal Studies	30	159	189		
	Tourism and Hotel Management	29	28	57		
	Mass Communication	147	53	200		
	Arts and Design	187	66	253		
TOTAL		625	451	1076		

## 5.2. Graduates

The graduates of Pharos university for the year 2019-2020 (only) are provided in Table 2.a. below. This table shows that the gender ratio males to females is just about right, 1: 1.31, with slight increase in the number of Females over males.

**Table 2. The Count of Graduates of Pharos University for the year 2019-2020 classified as Males and Females per Faculty and Associated Ratio.**

#	Faculty	Females	Males	Total	Ratio Females/ Males
1	Pharmacy and Drug Manufacturing	301	166	467	1: 1.8
2	Dentistry	192	233	425	1: 0.8
3	Engineering	59	237	296	1: 0.24
4	Financial and Administrative Sciences	30	58	88	1: 0.52
5	Languages and Translation	94	16	110	1: 5.4
6	Legal Studies	10	25	35	1: 0.4
7	Tourism and Hotel Management	14	8	22	1: 1.75
8	Physical Therapy	209	96	305	1: 2.18
9	Mass Communication	77	33	110	1: 2.3
10	Applied health Sciences Technology	237	116	353	1: 2.0
11	Arts and Design	126	42	168	1: 3
		<b>1349</b>	<b>1030</b>	<b>2379</b>	<b>1:1.3</b>

**Grdautes of the year 2019-2020**

57% 43%

- Males
- Females

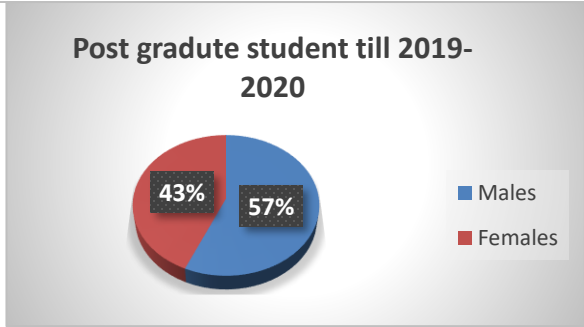
### 5.3. Postgraduates

The postgraduate students that are registered in pharos university till the academic year 2019-2020, Table 3 below.

In the academic year 2019-2020, pharos university received new postgraduate students from the Faculty of Engineering

Table 3. THE COUNT OF POSTGRADUATE STUDENTS FOR THE ACADEMIC YEAR TILL THE ACADEMIC YEAR 2019-2020 AND ASSOCIATED RATIO

FACULTY NAME	Females				Male				Total	Ratio Male : Female
	2017- 2018	2018 - 2019	2019- 2020	Total	2017- 2018	2018- 2019	2019- 2020	Total		
PHARMACY AND DRUG MANUFACTURING	1	1	9	11	9	2	3	13	24	1: 0.18
DENTISTRY	3	3	8	14	14	5	24	19	33	1: 0.32
ENGINEERING			5	5			3		8	1L 1.6
TOTAL	4	4	23	8	13	7	30	30	38	1: 0.8



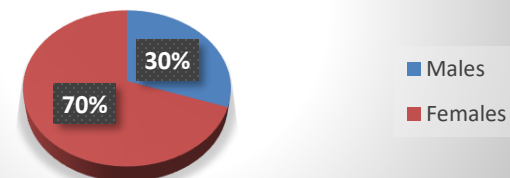
## 5.4. Academic Staff

The staff members and assistant staff (full time) , the estimates are provided in Table 4 a and b, with associated Ratios for the academic year 2019-2020. These two tables show that females in the staff members and assistant staff counts are both slightly higher in females that males. Both estimates conform with the gender equality policy of Pharos University

**Table 4.a Total count of Staff Members (Full Time) in each of the 11 Faculties classified as Males & Females and Associated Ratio**

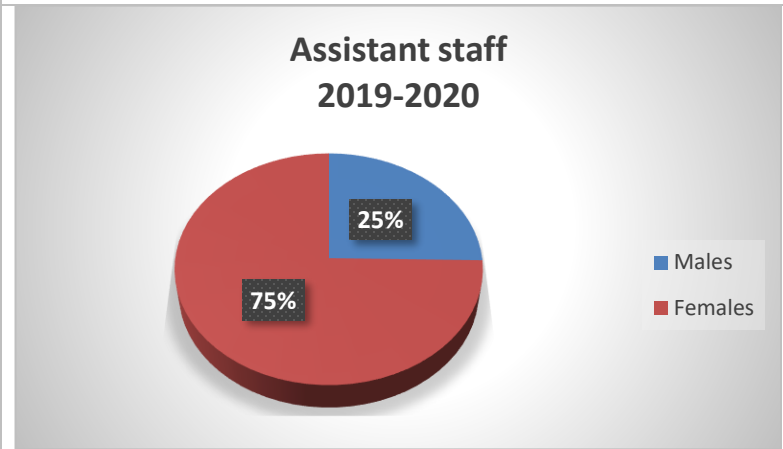
<i>Faculty</i>	<i>Total Count</i>	<i>Male</i>	<i>Female</i>	<i>Ratio Male : Female</i>
<i>Pharmacy and Drug Manufacturing</i>	139	26	113	1: 4.3
<i>Dentistry</i>	120	54	66	1: 1.2
<i>Engineering</i>	137	57	80	1: 1.4
<i>Financial and Administrative</i>	23	7	16	1: 2.3
<i>Languages and Translation</i>	36	5	31	1: 6.2
<i>Legal Studies and International Relations</i>	18	10	8	1: 0.8
<i>Tourism and Hotel Management</i>	15	6	9	1: 1.5
<i>Mass Communication</i>	27	7	20	1: 2.8
<i>Arts and Design</i>	68	6	62	1: 10.3
<i>Applied Health Sciences Technology</i>	82	24	58	1: 2.4
<i>Physical Therapy</i>	47	14	33	1: 2.36
<b>Total</b>	<b>712</b>	<b>216</b>	<b>496</b>	<b>1: 2.23</b>

**Staff Members (Full Time) in each of the 11 Faculties classified as Males & Females and Associated Ratio...**



**Table 4.b. Total Count of Assistant Staff (full Time) in each of the 11 Faculties classified as Males & Females and Associated Ratio**

<i>Faculty</i>	<i>Total count</i>	<i>Male</i>	<i>Female</i>	<i>Ratio (Males : Females)</i>
<i>Pharmacy and Drug Manufacturing</i>	81	16	65	1: 4
<i>Dentistry</i>	75	32	43	1: 1.3
<i>Engineering</i>	85	30	55	1: 1.8
<i>Financial and Administrative</i>	16	2	14	1: 7
<i>Languages and Translation</i>	25	2	23	1: 11.5
<i>Legal Studies and International Relations</i>	10	2	8	1: 4
<i>Tourism and Hotel Management</i>	8	2	6	1: 3
<i>Mass Communication</i>	17	3	14	1: 4.6
<i>Arts and Design</i>	45	3	42	1: 14
<i>Applied Health Sciences Technology</i>	43	10	33	1: 3.3
<i>Physical Therapy</i>	34	9	25	1: 2.7
<b>Total</b>	<b>439</b>	<b>111</b>	<b>328</b>	<b>1: 3</b>





**Table 4.c. The Count of Adjunct professors (Part time) staff members, Assistant Staff and Free Lancer members classified as Females and Males and Associated Ratio**

	Professors			Assistant Professors			Lecturers PhD Holders			Assistant lecturers M.Sc. Holders			Demonstrators			Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
count	45	18	63	15	8	23	29	16	43	13	21	34	14	51	65	116	114	230
FTE	15	6	21	5	2.6	7.6	9.6	5.3	14.9	4.3	7	11.3	4.6	17	21.6	38.6	38	76.6
M:F Ratio (FTE)	1: 0.4			1: 0.5			1: 0.5			1: 1.6			1: 3.6			1: 0.9		

Total Adjunct Staff = 230

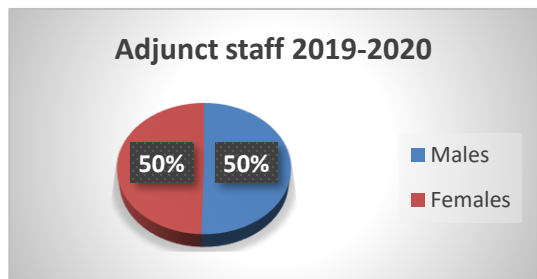



Table 5. a. below, shows the counts of staff Members of Superior positions in each of the 11 Faculty Councils Faculties classified as Males & Females. These counts include deans, head of Departments, professors and assistant professors. The total count satisfies the gender ratio (male to female) of 1: 0.9.

**Table 5. a The Count of superior positions - Faculties level and associated Ratio**

Faculty	Total Number	Males	Female	Ratio
Pharmacy and Drug Manufacturing	5	2	3	1:
Dentistry	33	17	16	1:
Engineering	46	42	4	1:
Financial and Administrative	5	3	2	1:
Languages and Translation	6	4	2	1:
Legal Studies and International Relations	1	1	0	1:
Tourism and Hotel Management	3	0	3	1:
Physical Therapy	13	11	2	1:
Mass Communication	2	1	1	1:
Applied Health Sciences Technology	4	1	3	1:
Arts and Design	13	7	6	1:
<b>Total</b>	<b>131</b>	<b>89</b>	<b>42</b>	



**Superior position Ratio  
2019-2020**  
 68% Males  
 32% Females

**Table 5.b. shows the count of superior positions on the level of entire University The gender ratio (males to females) in this case is 1: 0.8**

**Table 5.b. The Count of superior positions - University level and Associated Ratio**

Position	Males	Females	Total	Ratio
University President	1	0	1	1:0
Vice Presidents	2	2	4	1:1
Head of Central Quality Assurance Unit	0	1	1	1:1
Advisors to the President	2	0	2	2:0
Deans	7	4	11	1:0.5
Vice deans and Head of Departments	29	21	50	1:0.7
<b>Total</b>	<b>41</b>	<b>28</b>	<b>69</b>	<b>1:1.3</b>

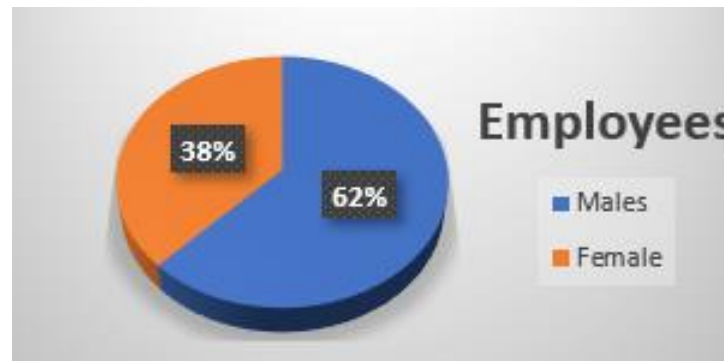


## 5.5. Employees

Finally, the gender distribution of the employees in the university is presented in Table 6 below. This Table shows that Male employees are about double the female employees. The main reason for this disparity is the position of male employees in the security section of the university. They constitute 138 male employee out of a total count of 142.

**Table 6. The total count of Employees classified as Females and Males and associated Ratio**

Position count	Females	Males	Total	Ratio (Males: females)
Total Administrational positions	267	597	864	1: 0.45
Specialized Lab. Technicians	81	43	124	1: 1.89
Outpatient clinic	46	12	58	1: 3.83
Total	394	652	1046	1: 0.60



## 5.6. Conclusions

1. Women are well presented in all disciplines of the University. They have equal rights and foot to men to men in education rights, jobs, research and participation in all activities.
2. Women are included in senior jobs at the administrative faculty and university levels.
3. Women in Pharos University are subject to maternity and paternity policies that support their inclusion in all work places with equal rights to men according to the Women national bylaws (Appendix) <https://www.pua.edu.eg/wp-content/uploads/2019/12/Policy-Statements-2018.pdf>
4. Women in Pharos University are on equal pay scale equity including commitment to elimination of gender pay gaps in accordance to the annual track measure of the pay scale equity.

**5.7. Registered Students in the First Academic (freshmen) per Year- 2006-2019**

<b>Year</b>	<b>Males</b>	<b>Females</b>	<b>Total</b>	<b>Males to Females Ratio</b>
<b>2006-2007</b>	335	323	658	1:0.9
<b>2007-2018</b>	488	407	895	1: 0.83
<b>2008- 2019</b>	532	507	1039	1: 0.96
<b>2009-2010</b>	555	540	1095	1: 0.9
<b>2010-2011</b>	235	164	399	1: 0.7
<b>2011-2012</b>	676	809	1485	1: 19
<b>2012-2013</b>	860	901	1761	1: 1.04
<b>2013- 2014</b>	928	979	1907	1: 1
<b>2014-2015</b>	1085	1300	2385	1: 1.2
<b>2015-2016</b>	1181	1392	2573	1: 1.18
<b>2016-2017</b>	1359	1458	2817	1: 1.07
<b>2017-2018</b>	1505	1550	3055	1: 1.02
<b>2018-2019</b>	1487	1507	2994	1: 1.01
<b>2019-2020</b>	1169	1234	2403	1: 1.105

## SDG 6 clean water and sanitation

Access to water and sanitation are basic human rights and are critical sustainable development challenges. Pharos university is involved in the following activities

### 6.1. University management Plan for water conservation

Pharos University is implementing a plan for the re-use of water in its premises.

- (a) wastewater and as per the records of the university administration, wastewater from washing rooms, kitchens, and laboratories are collected and channeled to a specialized company to manage the recycling process and get rid of toxic material in a safe way. The university has signed a contracts with specialized companied for collection and treatment of wastewater in a sustainable way. This company was selected based on its environmental portfolio that ensures that water is reused in an environment friendly way. The company responsible to treating water for reuse according to the quality of output, mainly in irrigating street trees in the neighborhood.
- (b) Reuse of water: The university manage a process for rainwater collection and fresh water disposed from air conditions. Both water sources are channeled and sored in a 15m3 water tank for reuse in irrigation of the of landscape, and the play green ground that reach an area of about 35200. This green area has increased since last year where it was 21000m2. With this amount of water, the green areas in Pharos University is expected to increase every year
- (c) Drinking water: Drinking water quality is maintained at the university premises by installing 3 -level filters at the source inlet to purify drinking water before use by university members. The amount of freshwater reuse in the campus has decreased due to the above practices. The current average amount is about 2779 m3 per month.

### 6.2. Activities

On Tuesday 26 November 2019, the faculty of Engineering organized a symposium on “Safe disposal of sewage water and its impact and environmental protection”. The symposium addressed the challenges facing Alexandria governorate and the stages of safe disposal of sewage water and its sources, whether from agricultural drainage, industrial drainage, or human drainage. The symposium also addressed the modern methods currently used to reuse that water and potential extracts such as fertilizers and road asphalt

### 6.3. Courses addressing SDG 6

Faculty	Course name	Course code	SDG-relevancy	Topic
Applied Health Sciences Technology	Environmental Health	MGEH-101	6	Hygiene for Clean water and sanitation
Pharmacy	Instrumental Analysis	(PCD 203)	6	methods of water purification, the detection of impurities

Engineering	water and wastewater	ES 401	6	The course introduces an overview of Water Supply Introduction and Definitions, important Fields of Environmental Engineering, Environmental system, Waste cycles
Engineering	Water treatment	EP 328	6	This course introduces the students to Water chemical analysis, water treatment for different uses, Equipment design calculations

#### 6.4. Publications

<b>Removal of Zinc from Aqueous Solution Using Activated Oil Shale</b>
<b>Ehssan Nassef, Yehia Eltaweel</b>
Alexandria university
<b>Synthesized silver carbon nanotubes and zinc oxide nanoparticles and their ability to remove methylene blue dye</b>
<b>(2019) Journal of Nano Research, 56, pp. 1-16. Cited 3 times.</b>
<b>El-Khatib, A.M., Yousef, N.S., Ghatass, Z.F., Badawi, M.S., Mohamed, M.M., Elkhatab, M.</b>
Beirut university, Alexandria university
<b>Removal of Zinc from Aqueous Solution Using Activated Oil Shale</b>
<b>Ehssan Nassef, Yehia Eltaweel</b>
Alexandria university



## SDG7 Affordable Energy

### 7.1. Activities

- The Petrochemical Engineering Department (Faculty of Engineering), in cooperation with the PUA student chapter of the Society of Petroleum Engineers (SPE) at the Faculty of Engineering, held a symposium about the future of petrochemicals and chemical engineering on Tuesday, 10 March 2020. The symposium was given by Eng. Karim Ezzat, the Head of the Chemical Engineering Department at the Syndicate of Engineers in



Alexandria. Many important topics were discussed in the symposium, including:

- The relationship between petrochemical engineering and chemical engineering.
- Job opportunities in the field of petrochemical engineering.
- The syndicate's services for students.
- The considerable value of field training for the engineering student.

<https://www.pua.edu.eg/the-future-of-petrochemicals-and-chemical-engineering/>

### 7.2. Students' projects

Students contributes with the following projects in the filed of energy

Project name	Summary
2. Natural Fibers	The usage of natural resources will play a leading role in the sustainable development of the cement and concrete industry during this century. Plant-based natural fibres are used more increasingly in construction materials. Despite the low-cost of such environmentally friendly renewable material, it has the ability to enhance the mechanical properties of construction materials. This project presents extensive experiments on the use of plant based natural fibres as reinforcement for cement-based composites, with a particular emphasis upon fibre types; fibre characteristic, and fibre-cement composites performance
3. Solar PV pumps for sustainable irrigation in Egypt	This project represents a comprehensive design of photovoltaic water pumping system powered entirely by solar energy with object of conserving electricity by reducing the usage of grid power and conserving water by reducing water losses. Proposed system is easy to implement and environment friendly solution for

	irrigation fields as well as requires minimal maintenance and attention and is self-starting.
4. Design and optimization of solar collectors' network for swimming pool heating application	This project presents a general procedure for designing and optimizing the arrangement of solar collectors of swimming pool heating applications using TRNSYS software. The optimal arrangement of the solar collectors for thermal applications requires a merge between thermal and hydraulic objectives. For the thermal side, the working fluid must provide the heat load for the swimming pool at the specified temperature also for the hydraulic side the fluid must flow through the system facing a pressure drop within the specified limits. In this project, the overall arrangement of solar collectors which forms the total collector surface area is named by the (solar collector's network). This network will be practically applied on a swimming pool as a case study for this project. In addition to, an experimental model of a solar heater is constructed to fit the swimming pool.
5.	
6. Design, Modeling and performance analysis of solar still	Two identical conventional solar still have been fabricated and will be assembled. For enhancing the freshwater yield, we used some parameters on solar still like a black aluminum sheets fins fixed on a black Basin (steel, 80*50*10 cm, thickness 6 mm). The transparent glass covers of 5mm thickness were placed at an inclination of 30° to the horizontal. Moreover, we used absorbing material like a black dye and sensible heat storage material on different water depth (20mm, 30mm and 40mm). Also, modeling has been carried out aided by some basic and simplified hypotheses, according to overall thermal energy balances on glass, water mass and basin. while taking into consideration an atmospheric condition such as temperatures, humidity, and solar intensity as well as wind speed.
7. Design and optimization of solar collectors' network for swimming pool heating application	This project presents a general procedure for designing and optimizing the arrangement of solar collectors of swimming pool heating applications using TRNSYS software. The optimal arrangement of the solar collectors for thermal applications requires a merge between thermal and hydraulic objectives. For the thermal side, the working fluid must provide the heat load for the swimming pool at the specified temperature also for the hydraulic side the fluid must flow through the system facing a pressure drop within the specified limits. In this project, the overall arrangement of solar collectors which forms the total collector surface area is named by the (solar collector's network). This network will be practically applied on a swimming pool as a case study for this project. In addition to, an experimental model of a solar heater is constructed to fit the swimming pool.

8. Design, Modeling and performance analysis of solar still	Two identical conventional solar still have been fabricated and will be assembled. For enhancing the freshwater yield, we used some parameters on solar still like a black aluminum sheets fins fixed on a black Basin (steel, 80*50*10 cm, thickness 6 mm). The transparent glass covers of 5mm thickness were placed at an inclination of 30° to the horizontal. Moreover, we used absorbing material like a black dye and sensible heat storage material on different water depth (20mm, 30mm and 40mm). Also, modeling has been carried out aided by some basic and simplified hypotheses, according to overall thermal energy balances on glass, water mass and basin. while taking into consideration an atmospheric condition such as temperatures, humidity, and solar intensity as well as wind speed.
9. Design and optimization of solar collectors' network for swimming pool heating application	This project presents a general procedure for designing and optimizing the arrangement of solar collectors of swimming pool heating applications using TRNSYS software. The optimal arrangement of the solar collectors for thermal applications requires a merge between thermal and hydraulic objectives. For the thermal side, the working fluid must provide the heat load for the swimming pool at the specified temperature also for the hydraulic side the fluid must flow through the system facing a pressure drop within the specified limits. In this project, the overall arrangement of solar collectors which forms the total collector surface area is named by the (solar collector's network). This network will be practically applied on a swimming pool as a case study for this project. In addition to, an experimental model of a solar heater is constructed to fit the swimming pool.
10. Smart campus	This project is still proceeding in the academic year 2020/2021 and it aims to construct a smart system for the life of students and staff members in university campus. It helps the education process and provides facilities to check attendance. It also allows students to enter the campus and study rooms with a smart card that can also be used for fees payment.

### 7.3. Courses in curricula

Faculty	Course name	Course code	SDG-relevancy	Topic
Engineering	Energy Systems	EE 271	7	Studying the availability of using PV arrays in residential & commercial areas
Engineering	Energy conservation	EP 330	7	Different methods of energy conservation: electrical energy conservation, lightening, energy saving, heat energy saving,

				insulation, reusing of hot waste water
Engineering	Renewable energy and storage systems	EM 333	7	Different methods of energy storage systems, : electrical energy lightening, energy saving, heat energy saving, insulation, solar energy, smart building, equipment design, sensors and computer-controlled processes.

#### 7.4. Publications

<b>A New Self-Synchronized Strategy for Grid-Connected Three Phase Voltage Source Inverters</b>
<b>Aboushal, M.A., Moustafa, M.M.Z., El-Gammal, M.A</b>
Alexandria University
<b>Hybrid energy-efficient protocol in delay tolerant networks for IoT systems</b>
<b>Elsaadany, A., Aboulhassan, M.</b>
Pharos University in Alexandria
<b>Performance Analysis and Power Optimization for Spectrum-Sharing Mixed RF/FSO Relay Networks with Energy Harvesting</b>
<b>El-Malek, A.H.A., Aboulhassan, M.A., Salhab, A.M., Zummo, S.A.</b>
Japan University of Science and Technology, King Fahd University of Petroleum & Minerals, Dhahran
<b>The ability of forecasting flapping frequency of flexible filament by artificial neural network</b>
<b>Fayed, M., Elhadary, M., Ait Abderrahmane, H., Zakher, B.N.</b>
American University of the Middle East, Khalifa University of Science and Technology,

## SDG8. Decent work and Economic Growth

### 8.1. Policies

Within the context of providing decent workplaces and economic growth, Pharos University adopts policies to reduce informal employment and gender pay gap and promote safe and secure working environments to create decent work for academic staff and employees and secure their workplace.

<https://www.pua.edu.eg/wp-content/uploads/2019/12/Policy-Statements-2018.pdf>

For students and graduates, Pharos University is keen to increase employment opportunities. For this purpose, the following activities were carried out in the Academic year 2018-2019

### 8.2. Workshops/Conferences and seminars

- The Electrical Engineering Department (Faculty of Engineering), in collaboration with the Career Development and Entrepreneurship Center (CDEC), organized a seminar entitled “Fetch Your Career” for the students of the faculty of Engineering. The seminar was delivered by Eng. Sara Hussien, an entrepreneurship specialist at CDEC on Tuesday, 10 December 2019. The aim of the seminar was to develop the students’ skills in a way that matches the labour market current needs and enables them to choose an appropriate workplace after graduation.



<https://www.pua.edu.eg/fetch-your-career/>

- The Faculty of Financial and Administrative Sciences at Pharos University, in collaboration with the TU Dublin, held the “ fifth international conference of Business Innovation and Economic Sustainability Challenges” on April, 2019 in PUA Conference Hall. The Faculty members attended the conference, along with teaching assistants who presented several scientific researches in the conference. It is worth mentioning that the conference witnessed the participation of many researchers from different estimable universities and academic organizations such as:
  - TU Dublin in Ireland.
  - JAMK University in Finland.
  - The German University in Cairo.
  - Alexandria University.
  - The Faculty of Economics and Political Science- Cairo University.
  - The Arab Academy for Science and Technology.
  - Alexandria Higher Institute of Engineering and Technology.

<https://www.pua.edu.eg/pharos-university-holds-the-5th-international-conference-of-business-innovation-and-economic-sustainability-challenges/>

- Within the framework of the endeavors of the faculty of Mass Communication to constantly communicate with its graduates, a seminar entitled “The Gap between University Education and Labor Market” was organized for the faculty alumni on Tuesday, 17 December 2019. The seminar included a discussion on what the faculty graduates have achieved in the labor market. They also talked about how the gap between university education and labor market affected their careers and the difficulties they have faced in the working life as well as their suggestions to narrow this gap. All the suggestions were about the need to have a job fair to link the graduates with labor market. At the end of the seminar, the attendees were encouraged to have their specific goal and challenge all difficulties to achieve it. The graduates expressed their admiration for the day and its idea and the need to repeat it again.



<https://www.pua.edu.eg/the-gap-between-university-education-and-labor-market/>

- On December 2<sup>nd</sup> 2019, The staff and students of the faculty of Engineering participated in the “Conference and Exhibition of the international conference for Transport Technology, Trans MES 2019”. They have been exposed to the latest technology of AI and digital transformations, cloud computing and internet of things. This is inline with SDG8 Decent work places and economic growth.



- On 15 December 2019, The students of the faculty of Engineering participated in the graduation project contest (JAC-ECC), and won the third place in this contest with the project titled “ IOT Approach for Sustainable Green Campus’

- Mobilities through MOUs: the Career Development and Entrepreneurship center through the MOU established with JAMK university of Finland has nominated PUA candidate to travel to Finland and attend workshops and get training on ways and means to develop the Career Development and Entrepreneurship center. The candidate came back with new ideas for implementation at Pharos university

Name	Title	Faculty- PUA	Host university	Travel Dates
Sara Hussein Fahmy Mohamed Ahmed	Lecturer	Career Development and Entrepreneurship center	JAMK University Finland	1 June 2019 To 13 June 2019

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### 8.3. Meetings and Activities

- The career development and entrepreneurship center of Pharos University participated in the first roundtable meeting in cooperation with the French Chamber of Commerce and Industry to for promoting cooperation between academia and business sector. The aim of this meeting is to support innovation and entrepreneurship and encourage spin-offs.  
<https://www.pua.edu.eg/a-kth-high-ranking-delegation-in-a-visit-to-pharos-university/>
- Another meeting was held in collaboration with JAMK University of Applied Sciences, hosts the first week of innovation to be held under the title of “JAMK INNOFlash” from 21- 24 April at Pharos University. This was held in the presence of Mr. Mieskolainen Matti, a lecturer at the JAMK University of Applied Sciences. The first week of innovation will be attended by PUA students from different faculties.  
<https://www.pua.edu.eg/the-cdec-participated-in-the-ba-round-table-meeting-for-promoting-cooperation-between-academia-and-business-sector/>
- Pharos university participated in Egypt Legal Tech Hackathon 2019; an international competition in legal entrepreneurship. This competition is the first project for the CIPIEE Centre (Centre pour l’Insertion Professionnelle, l’Innovation et l’Entrepreneuriat en Egypte) which is opened in Senghor University.  
<https://www.pua.edu.eg/46679/>
- The Faculty of Tourism and Hotel Management received a delegation of the Four Seasons Hotel in Alexandria on Wednesday, 26 February 2020 to participate in the “Change Your Future” annual job fair held in the PUA campus. The fair featured many interviews with the qualified faculty alumni to provide them with job opportunities in the Four Seasons Hotel, in addition to opening up training opportunities for the faculty undergraduates at the hotel different departments.  
<https://www.pua.edu.eg/change-your-future-job-fair/>
- The students’ federation of the faculty of Pharmacy and Pharmaceutical Manufacturing-Pharos University organized the 9th job fair. It was held in the presence of faculty staff, teaching assistants on Tuesday 23/04/2019 at university theatre. The faculty organizes this job fair each year to allow chances for the students to know the different fields and get job and training vacancies by presenting their CVs in hand. This job fair also gained a huge success. Twenty-three companies and different pharmacies participated in this job fair, many of the students of Pharmacy and Pharmaceutical Manufacturing and some students from the other faculties.  
<https://www.pua.edu.eg/the-9th-job-fair/>
- The faculty of Financial and Administrative Sciences holds the 9th Job Fair on Monday,15 April, 2019 at the Student Theatre. A number of distinguished companies will participate in the fair.  
<https://www.pua.edu.eg/the-faculty-of-financial-and-administrative-sciences-holds-its-9th-job-fair/>



## 8.4. Students' Projects

Students of Pharos university carried out the projects in the table below to contribute to decent work places.

Project name	Summary
11. IoT approach for sustainable green campus	This project proposes a complete layout for a smart green campus using IoT as a core technology. This project highlights several main features of green campus such as energy saving and efficiency water consumption. The communication technologies that will be implemented in the project layout will be RFID, Bluetooth and cloud computing. Moreover, some prototypes will be designed to validate the proposed layout
12. Smart campus	This project is still proceeding in the academic year 2020/2021 and it aims to construct a smart system for the life of students and staff members in university campus. It helps the education process and provides facilities to check attendance. It also allows students to enter the campus and study rooms with a smart card that can also be used for fees payment.
13. Smart traffic light	(SDG 11) Make cities and human settlements inclusive, safe, resilient and sustainable

## 8.5. Courses in Curricula

The courses in the table below addresses the topic of economic growth. These courses are 7 courses, and are delivered for undergraduates in 4 faculties

Faculty	Course name	Course code	SDG-relevancy	Topic
Applied Health Sciences Technology	Lab Management	MLLM-101	8	Green procedures and procurements
Tourism	Human Resource Management	THM 261	8	Economic growth and enterprises
Tourism	Industry Internship (1), (2), (3) and (4)	HM 391, HM 392, HM 493, and HM 494	8	Economic growth and partnership with tourism companies
Mass communication	Electronic marketing	PRAD (205)	8	Introducing the concept of e-marketing, market definition and division , marketing environment, and how to identify and study consumer behavior
Business	International Economics	BF 636	8	The course focuses on international economic relations and its sustainability
Business	Corporate Finance	BF533	8	The course introduces the sustainable finance systems in corporates for entrepreneurs.
Business	Entrepreneurship	BT 637	8	Think tank and incubators



## SDG 9 – Industry, Innovation, and Infrastructure

### 9.1. Conferences / Workshops:

- The [Petrochemical Engineering Department](#) (Faculty of Engineering) announces the start of a number of online **summer training courses**. The three-week courses will start on Saturday, **15 August 2020** and the registration opens on Monday, 10 August 2020. It is worth mentioning that the first training course entitles “Trouble shooting in Petrochemical plants” and will be attended by a number of experienced professionals in the field of petrochemical industry.



<https://www.pua.edu.eg/the-petrochemical-engineering-department-holds-the-summer-training-courses/>

- On October 10<sup>th</sup> 2019, staff and students of the faculty of engineering had a field visit to Alex Electricity Distribution Company to explore electrical energy distribution and energy conservation practices, which is inline with SDG 9 (Industry, Innovation and infrast.) and SDG 7 Affordable energy
- ON December 8, 2019, staff and students of the faculty of engineering had a field visit to Sidi Kerier petrochemical company (SidPec), to learn more about polymers and its production, and the quality aspects associated with this industry.
- On December 12 2019, 2019, staff and students of the faculty of engineering had a field visit to Alexandria Company for fertilizers to explore more about this industry, and its production with the minimum use of energy . , which is inline with SDG 9 (Industry, Innovation and infrast.)



- During the period of November 2019, the Faculty of Engineering organized a workshop in cooperation with
- the Plastic Technology Center in Alexandria ,
- ministry of trade and industry,
- SEED project of the USAID,
- Cabinet of chemical industries, and
- The Value Chain Development Center of the Nile Pioneers Initiative

The workshop title was” Degradable plastics and additive technology”. The aim pf the project was spreading the awareness of plastic manufacturers in Murgham Complex, on additive technology for degradable plastics.

The workshop, dealt with new technologies in using additives to produce plastics and biodegradable paints instead of traditional plastics, and how to motivate and encourage institutions and companies to use it and reduce the cost of its production. A number of participating companies presented some studies for their production of plastic and biodegradable paints in the presence of a number of Industrial representatives

## 9.2. Students’ Projects

Project name	Summary
14. Natural Fibers	The usage of natural resources will play a leading role in the sustainable development of the cement and concrete industry during this century. Plant-based natural fibres are used more increasingly in construction materials. Despite the low-cost of such environmentally friendly renewable material, it has the ability to enhance the mechanical properties of construction materials. This project presents extensive experiments on the use of plant based natural fibres as reinforcement for cement-based composites, with a particular emphasis upon fibre types; fibre characteristic, and fibre-cement composites performance
15. Smart campus	This project is still proceeding in the academic year 2020/2021 and it aims to construct a smart system for the life of students and staff members in university campus. It helps the education process and provides facilities to check attendance. It also allows students to enter the campus and study rooms with a smart card that can also be used for fees payment.

16. Smart traffic light	(SDG 11) Make cities and human settlements inclusive, safe, resilient and sustainable
17. Smart campus	This project is still proceeding in the academic year 2020/2021 and it aims to construct a smart system for the life of students and staff members in university campus. It helps the education process and provides facilities to check attendance. It also allows students to enter the campus and study rooms with a smart card that can also be used for fees payment.
18. Design a solar hybrid air conditioning compressor system	Statistics these days say that electricity demand increase in air conditioning system, due to increasing in temperature in the most of countries, so people suffer from high electricity bills. Integrate solar devices or systems to use heat gain from sun to get electricity, and devices that we can use {photovoltaic, solar collector, hybrid system}.The electricity produced can be used to operate compressor that used for compressing the refrigerant in air conditioning system .Three system mentioned above, we should select the best system that give low electricity demand and high efficiency .
19. Solar trackers for hybrid power supply	This project represents a smart power supply by using solar energy as the sources. It reduces the Use of other sources in order to achieve our goal to generate electricity (during day time). The solar tracker device equipped with the project which is absorbs the ultraviolet (UV) from the sun in maximum condition. The tracker operates with single axis rotation where it can be rotating horizontal. This circuit is activated when light dependent resistor (LDR) detecting the sunshine where four sensors are placed at north and south position.
20. Public Transportation System	This project was done in the academic year 2019/2020 and its main goal was to design a smart system for public transport. The system uses GPS and GSM system to determine the exact location of vehicle and collect data to provide people with the best choice of public transport to use. The system saves time and money and helps in the concept of building smart cities and includes several industrial innovations. (SDG 11) Make cities and human settlements inclusive, safe, resilient and sustainable (SDG 9) Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
21. Brain Controlled Smart Wheelchair Based on Mental Task Classification	This project was done in the academic year 2019/2020. The main objective of the project is to help people that were born with the inability to move or had experienced accidents, which led to their loss of this ability. Such situation negatively affected their lives and made them in a permanent need for those who take care of them. The project used technologies to allow these people to control wheel chair via their brain function. (SDG 9) Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. (SDG 3) Ensure healthy lives and promote well-being for all at all ages
22. Smart campus	This project is still proceeding in the academic year 2020/2021 and it aims to construct a smart system for the life of students and staff members in university campus. It helps the

	education process and provides facilities to check attendance. It also allows students to enter the campus and study rooms with a smart card that can also be used for fees payment.
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### 9.3. Courses in Curricula

Faculty	Course name	Course code	SDG-relevancy	Topic
Pharmacy	Project in Pharmacognosy & Natural Products	PG E08	3,12, 9	Sustainable use of natural resources
Pharmacy	Good Manufacturing Practices	PPC E02	12, 9	Responsible production consumption techniques in pharmaceutical industry
Tourism	Introduction to Hospitality Industry	HM 101	9, 17	Sustainable industrial practices
Tourism	Entrepreneurship in Hospitality Industry (Elective)		9.17	Economic growth and partnership with tourism companies

### 9.4. Publications

<b>Heat transfer enhancement in a radial turbulent sink flow cooling system</b>
<b>Sorour, M.M., Fayed, M., El-Din, N.A.</b>
Alexandria University
<b>A Coherent Performance for Noncoherent Wireless Systems Using AdaBoost Technique</b>
<b>Gamal, H., Ismail, N.E., Rizk, M.R.M., Khedr, M.E., Aly, M.H.</b>
Arab Academy for Science Technology, Alexnadria university
<b>A novel nanocomposite of Liquidambar styraciflua fruit biochar-crosslinked-nanosilica for uranyl removal from water</b>
<b>Mahmoud, M.E., Khalifa, M.A., El Wakeel, Y.M., Header, M.S., El-Sharkawy, R.M., Kumar, S.,</b>
Old Dominion University, Alexandria University
<b>A System Dynamics Model of Apparel Supply Chain UnderMass Customization</b>
<b>Issa, M., Elgholmy, S., Sheta, A., Fors, M.N.</b>
Alexandria university
SDG9
<b>ArMTFr: a new permutation-based image encryption scheme</b>

<b>Elkamchouchi, H., Salama, W.M., Abouelseoud, Y.</b>
Alexandria University
<b>Biodegradation of Petroleum Oil Effluents and Production of Biosurfactants: Effect of Initial Oil Concentration</b>
<b>Mostafa, N.A., Tayeb, A.M., Mohamed, O.A., Farouq, R.</b>
Minia university
<b>Design and testing of high-density polyethylene nanocomposites filled with lead oxide micro- and nano-particles: Mechanical, thermal, and morphological properties</b>
<b>Mahmoud, M.E., El-Khatib, A.M., El-Sharkawy, R.M., Rashad, A.R., Badawi, M.S., Gepreel, M.A.</b>
Beirut Arab University, Egypt-Japan University of Science and Technology
<b>Does engineering of nanoshapes have antibacterial synergy with magnetic signal exposure?</b>
<b>El-Kaliuoby, M.I., El-Khatib, A.M., Khalil, A.M.</b>
Alexandria University
<b>Effect of square pulsed magnetic field exposure on growth kinetics of Dickeya solani</b>
<b>Balabel, N.M., El-Kaliuoby, M.I., Khalil, A.M.</b>
Alexandria University, Agriculture Research Center
<b>Fabrication and characterization of phosphotungstic acid - Copper oxide nanoparticles - Plastic waste nanocomposites for enhanced radiation-shielding</b>
<b>Mahmoud, M.E., M.El-Sharkawy, R., Allam, E.A., Elsaman, R., El-Taher, A</b>
Al-Azhar University, Alexandria University
<b>Graphene Magneto-Electric Antenna on Curved Structures for Millimeter Wave Communications</b>
<b>Ghazi, A.M., Hamada, H., Malhat, H.A., Zainud-Deen, S.H</b>
Higher Technological Institute, Menoufia University, Badr University
<b>High gain graphene-based magneto-electric antenna for 5G communications</b>
<b>Zainud-Deen, S.H., Malhat, H.A., Ghazi, A.M.</b>
Badr University in Cairo, Menoufia University
<b>Humans and bots web session identification using k-means clustering</b>
<b>Medhat, M., Hassan, Y.F., Elsayed, A.</b>
Alexandria university
<b>Kinetic study of the esterification of unsaturated free fatty acids</b>
<b>Hawash, S.A., Ebrahiem, E.E., Farag, H.A.</b>

Alexandria University, Minia University
<b>Lupine extract: A promising eco-friendly corrosion inhibitor</b>
<b>Zarraa, R.M., Mahgoub, F.M., Hefnawy, A.</b>
Alexandria university
<b>On the Location of a Constrained k- Tree Facility in a Tree Network with Unreliable Edges</b>
<b>Aboutahoun, A.W., Fares, E.</b>
Zewail City of Science and Technology
<b>Study of some gamma ray attenuation parameters for new shielding materials composed of NANO ZnO blended with high density polyethylene</b>
<b>Alsayed, Z., Badawi, M.S., Awad, R., Thabet, A.A., El-Khatib, A.M.</b>
Beirut Arab University & Alexandria Univeisty
<b>Surface Defects Classification of Hot-Rolled Steel Strips Using Multi-directional Shearlet Features</b>
<b>Ashour, M.W., Khalid, F., Abdul Halin, A., Abdullah, L.N., Darwish, S.H.</b>
University Putra Malaysia
<b>The Effect of Vortex Generators on Aerodynamics for Sedan Cars</b>
<b>Bassem Nashaat Zakher, Mostafa El-Hadary, Andrew Nabil Aziz</b>
City of Scientific Research and TechnologicalApplication , Alexandria university
<b>The Modified Fractional Power Series Method for Solving Fractional Non-isothermal Reaction–Diffusion Model Equations in a Spherical Catalyst</b>
<b>Syam, M.I., Anwar, M.-N.Y., Yildirim, A., Syam, M.M.</b>
UAE University , Ege UniversityTurkey

## SDG 10 – Reduced Inequalities

### 10.1. Activities:

- The faculty of Mass Communication, organized a celebration for orphans on Wednesday, 18 December 2019 under the name of “Yalla Nsaaed” (Let’s Help Each Other). The event started with playing DJ music, then the children played various games with their favorite cartoon character toys and received food and sweets. The event ended by distributing gifts among the orphans who were very eager to continue dancing with before leaving the faculty.



<https://www.pua.edu.eg/yalla-nsaaed/>

- The faculty of mass communication produces a short film on deafness and hearing impairment “ Do Understand ME” which addresses different activities of persons with disabilities and how to include them day to day living conditions.

<https://www.youtube.com/watch?v=HwoLx5Q3gvE&list=PLsZ1HNiwxSAPBp9Ff74mHK1NbRVLCp-52&index=8>

### 10.2. students ‘Projects

Project name	Summary
23. Brain Controlled Smart Wheelchair Based on Mental Task Classification	This project was done in the academic year 2019/2020. The main objective of the project is to help people that were born with the inability to move or had experienced accidents, which led to their loss of this ability. Such situation negatively affected their lives and made them in a permanent need for those who take care of them. The project used technologies to allow these people to

	<p>control wheel chair via their brain function.</p> <p>(SDG 9) Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.</p> <p>(SDG 3) Ensure healthy lives and promote well-being for all at all ages</p>
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### 10.3. Courses in the curricula

Faculty	Course name	Course code	SDG-relevancy	Topic
Pharmacy	Pharmacotherapeutics for Special Population	PL E23	10	Wellbeing of special needs population
Pharmacy	Home Health Care	PN E19	10	Wellbeing of women health at home to reduce inequalities
Artificial Intelligence	Speech Recognition	AI402	10	Education for special needs to reduce inequalities
Artificial Intelligence	Language Processing	AI407	10	Education for special needs to reduce inequalities
Physical Therapy	Public Health	PTBA 216	10	Good health of society particularly for poor
Physical Therapy	Psychology of Handicapped	PTBA 217	10	Psychic problem and treatment
Law	Labor and social security law	LV 06	10	Social security issues and reduces inequalities
Business	Business and society	BF 747	10	The course discussed the relationship between business and society in terms of achieving equality through Social corporate responsibility



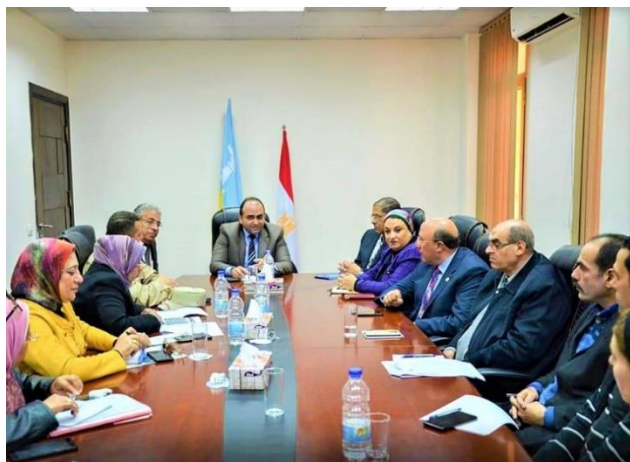
## SDG 11 – Sustainable Cities and Communities

### 11.1. Workshops/Conferences:

- In the academic year 2019- 2020, Staff members of the faculty of Applied Medical Sciences Technology coordinated a **workshop** “ Sustainable clean Environment” . This workshop was carried out jointly with Alexandria Governorate, Kim Company for petroleum services, Ministry of Environment.

### 11.2. Activities:

- The Community Service and Environment Development Affairs and the Community Service and Environmental Development Centre (CSED), Pharos University participated in a meeting about the “Live Green” initiative. The meeting was held in Alexandria Governorate Office on Wednesday, 12 February 2020.



The meeting aimed to discuss the mechanisms to apply the “Live Green” initiative launched by the President of Egypt to raise environmental awareness in Alexandria. The importance of the consultative role of Pharos University which came within the framework of the government keenness to achieve cooperation and integration by taking advantage of the experiences of the scientific bodies in Alexandria and working hand in hand for the benefit of the governorate was stressed. A study on “Harmonic Mechanisms for Treating all Types of Wastewater to Irrigate a Sustainable Green Belt to Protect the Vicinity of Lake Mariout.” Was presented by CSED representative. It is worth mentioning that the study impressed all the attendees and it was stressed upon the need for adopting that study by the governorate and other authorities at the local and central levels.

- <https://www.pua.edu.eg/pharos-contributions-in-the-live-green-presidential-initiative/>
- The faculty of mass communication produces a short film on a film on Ecotourism on the culture and heritage of villages in upper Egypt and called “Fedalos Anay” or “We Welcome you” . The film addresses the life of these small villages that were drowned under water before and currently after saving it is sustainable. The film also covers the traditional knowledge particularly for women and its role in he day to day life.
- <https://www.youtube.com/watch?v=D6HwJvQK-Uk&list=PLsZ1HNiwxSAPBp9Ff74mHK1NbRVLCp-52&index=11>

- On 22 October 2019, staff and students of the faculty of engineering had a field visit to Transport and Engineering company to explore the sustainable use of raw materials e.g. oils, strands, reuse of water and they had a presentation on the standard procedures and methodologies for testing the materials used in this industry



### 11.3. International Mobilities

Through MOUs, the Faculty of Arts and design nominated the Teaching assistant as indicated in the table below to travel to Aristotle university for training in the field of arts and design. The candidate spent most of the time in the host university to see how the curricula in Pharos university can be developed to match the international standards and sustainable development. On his return, he was able to make changes to some topics in the undergraduate curricula to infuse sustainability to the program. Staff members – Erasmus+ (2019-2020).

Name	Title	Faculty- PUA		Host university	Travel Dates
Mohamed Osama	Teaching Assistant	Faculty of Arts and design Department of Décor		Aristotle University Greece	15 April 2019 to 19 April 2019

### 11.4. Students' Projects

Project name	Summary
Water and wastewater	Wastewater treatment is a process, which is being done on the wastewater to change its quality for drinking or other suitable purposes. Wastewater treatment takes place in wastewater treatment plants, which should be designed under different circumstances. The project contains: <ol style="list-style-type: none"> <li>1- Design intake sum pump unit.</li> <li>2- Design sedimentation tank.</li> <li>3- Design filtration tank.</li> <li>4- Design sludge treatment process.</li> <li>5- Take a case study in a new compound city.</li> </ol>
Electrical design of residential compound area with management of distributed generation and optimum power quality performance by load demand side	The aim of this power system project is to help the student in his final B.E. graduation project to apply what he has learned in the field of power systems under graduate courses. The materials included in the following requirements of the design project shall be calculated and prepared in the same structure of the typical professional jobs of electrical engineering works according to the roles of IEC standard codes.
24. IoT approach for sustainable	This project proposes a complete layout for a smart green campus

green campus	using IoT as a core technology. This project highlights several main features of green campus such as energy saving and efficiency water consumption. The communication technologies that will be implemented in the project layout will be RFID, Bluetooth and cloud computing. Moreover, some prototypes will be designed to validate the proposed layout
25. Design a solar hybrid air conditioning compressor system	Statistics these days say that electricity demand increase in air conditioning system, due to increasing in temperature in the most of countries, so people suffer from high electricity bills. Integrate solar devices or systems to use heat gain from sun to get electricity, and devices that we can use <b>{photovoltaic, solar collector, hybrid system}</b> .The electricity produced can be used to operate compressor that used for compressing the refrigerant in air conditioning system .Three system mentioned above, we should select the best system that give low electricity demand and high efficiency .
26. Solar trackers for hybrid power supply	This project represents a smart power supply by using solar energy as the sources. It reduces the Use of other sources in order to achieve our goal to generate electricity (during day time). The solar tracker device equipped with the project which is absorbs the ultraviolet (UV) from the sun in maximum condition. The tracker operates with single axis rotation where it can be rotating horizontal. This circuit is activated when light dependent resistor (LDR) detecting the sunshine where four sensors are placed at north and south position.
Smart traffic light	(SDG 11) Make cities and human settlements inclusive, safe, resilient and sustainable

### 11.5. Courses in curricula

There are 16 courses in 6 faculties addressing the topic of sustainable cities as indicated in the table below

	Faculty	Course name	Course code	SDG-relevancy	Topic
1	Applied Health Sciences Technology	Development and Regulation of Medical Products	MGDR-101	12	Responsible consumption and production methods
2	Applied Health Sciences Technology	Ethical and Legal Issues in Health Fields	MGME-101	12	Wellbeing and living standards
1	Pharmacy	Environment and sustainability	PMC E01	12	Sustainable ecosystem services
2	Pharmacy	Project in Pharmacognosy & Natural Products	PG E08	12	Sustainable use of natural resources
3	Pharmacy	Good Manufacturing	PPC E02	12	Responsible production

		Practices			consumption techniques in pharmaceutical industry
4	Pharmacy	Natural Cosmetics	PGD E01	12	Sustainable use of natural resources
5	Pharmacy	Herbal medicine	PGD E02	12	Sustainable use of natural resources
6	Pharmacy	Sustainability in Therapeutics	PLD E03	12	Sustainable use of natural resources
1	Tourism	Consumer Behavior in Tourism and Hospitality (Elective)	THM 162	12	Responsible consumption and production methods
2	Tourism	Current issues in food service (Elective)	HM 336	12	Healthy food for wellbeing, consumption reduction
3	Tourism	Safe Food Service Management	HM 434	12	Healthy food for wellbeing, consumption reduction
1	Physical Therapy	Nutrition	PTBA 570	1,2	Health food for balanced nutrition
1	Engineering	Energy Systems	EE 271	7,12	Studying the availability of using PV arrays in residential & commercial areas
2	Engineering	Material science	EP 217	12	This course introduces the students to Classification of engineering materials, atomic and molecular structure. The course focuses on polymer properties and modification for special applications.
3	Engineering	Introduction to environmental engineering	EP 389	12, 13	The course introduces engineering aspect with complete environmental assessments of the impacts
1	Business	Consumer behavior	BF 746	12	The course focuses on issues related to the behavior of consumption and production and means to rationalize consumption

## 11.6 Publications

<b>Framework for Interaction between Databases and Microservice Architecture</b>
<b>Kholy, M.E., Fatatry, A.E.</b>
Alexandria University
<b>IMPACT OF BUILDING REGULATIONS ON THE URBAN FABRIC OF THE CITY: CASE STUDY OF ALEXANDRIA, EGYPT</b>
<b>NADIA SAMIR, RAMADAN ABD EL MAKSOU, IBRAHIM MAAROF</b>
Alexandria university

## SDG12- Responsible Consumption and Production

### 12.1. Conferences and Workshops

- On December 10, 2019 the faculty of Engineering organized a workshop on “ Sustainable Development” . The workshop included It included defining the concept of sustainable development, how to utilize and preserve resources, and the state's vision for implementing sustainable development
- On April 2019 through the 17th , and Within the framework of Pharos University’s interest in contributing to the achievement of sustainable development goals in education and scientific research, Pharos University had the honor to receive Dr. Fredrik Gröndahl - Head of the Department of Sustainable Development and Environmental Science and Engineering at the Royal Institute of Technology in Sweden KTH. The workshop began daily with a general lecture on the general sustainability concepts. The lectures delivered covered topics on climate change, organic pollutants, the development of the concept of sustainability in general, as well as its applications in the field of transportation

### 12.2. Projects:

- In the context of transferring Pharos University to be a sustainable university, there are several practices for ensuring the disposal of the wastes produced form the university in a sustainable way. The staff of the faulty of applied health sciences technology proposed a project to support sustainability aspects in the university for implementing recycling activities and take advantage of all that can be recycled and transformed from an ineffective product to an effective product as follows. The project took into consideration the following steps 1- Transferring all the amount of water consumption from sewage, laboratories and rainwater drainage to a treatment plant at the university to completely re-use it (zero waste). 2- Recycling of all waste to produce natural fertilizer for use in the cultivation of the university gardens to produce medicinal plants (thyme - mint - basil - flax seed - sesame - ....). 3- Recycling of some of the wastes resulting from students' use as packaging and others remains to work in the aesthetic material with the involvement students of the Faculty of Fine as graduation projects .
- The activities of Pharos University on recycling was reflected on the students, and they designed their graduation project on Recycling of Fabrics. The summary of the project is below

Project name	Summary
27. Recycling of fabric scrap	The importance of recycling textiles is increasingly being recognized. The purpose. Once in landfills, natural fibers can take hundreds of years to decompose. They may release methane and CO2 gas into the atmosphere. Additionally, synthetic textiles are designed not to decompose. In the

	landfill, they may release toxic substances into groundwater and surrounding soil. The synthetic fiber raw materials totally imported from outside as polyester and nylon and the annual consumption is 440 thousand tons and the recycling processes are not applicable, so the new technology for recycling this scrap is value added materials
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### 12.3. Activities

- The university has a mechanism for handling solid wastes and hazardous substances. This is carried out according to the instructions of the maintenance department at the university and the university technicians. The directory of environmental affairs at the university takes the responsibility of supplying all the material needed for handling the wastes, e.g.. gloves, masks, gowns, as well special safety boxes (red in color) , where all the sharp materials are disposed. The experimental animal remains are collected in special bags and placed in a refrigerator till collected. The process of disposal starts by separating the wastes in place, and placing them in the boxes identified till the collection stage and final disposal
- The university has signed two binding contracts with specialized companies to deal with the hazardous wastes includes wastes form labs and clinics. These companies were selected according to their environmental portfolio that ensure sustainability ongoing practices. A copy of these contracts are in Appendix 1
- All the procedures of disposing solid and liquid wastes are registered in the annual Environmental university portfolio that identify the number of employees, the number of faculties and departments, the number of clinics, types of wastes and date production and collection. This portfolio is registered at the university for internal use, and at the governorate of Alexandria for assessments and monitoring. (Appendix 2)

### 12.4. Courses in University Curricula

There are 15 courses in the curricula of 6 faculties dealing with consumption production concepts. The courses are provided in the table below

	Faculty	Course name	Course code	SDG-relevancy	Topic
1	Applied Health Sciences Technology	Development and Regulation of Medical Products	MGDR-101	12	Responsible consumption and production methods
2	Applied Health Sciences Technology	Ethical and Legal Issues in Health Fields	MGME-101	12	Wellbeing and living standards
1	Pharmacy	Environment and sustainability	PMC E01	12	Sustainable ecosystem services
2	Pharmacy	Project in Pharmacognosy & Natural Products	PG E08	12	Sustainable use of natural resources

3	Pharmacy	Good Manufacturing Practices	PPC E02	12	Responsible production consumption techniques in pharmaceutical industry
4	Pharmacy	Natural Cosmetics	PGD E01	12	Sustainable use of natural resources
5	Pharmacy	Herbal medicine	PGD E02	12	Sustainable use of natural resources
6	Pharmacy	Sustainability in Therapeutics	PLD E03	12	Sustainable use of natural resources
1	Tourism	Consumer Behavior in Tourism and Hospitality (Elective)	THM 162	12	Responsible consumption and production methods
2	Tourism	Current issues in food service (Elective)	HM 336	12	Healthy food for wellbeing, consumption reduction
3	Tourism	Safe Food Service Management	HM 434	12	Healthy food for wellbeing, consumption reduction
1	Physical Therapy	Nutrition	PTBA 570	12	Health food for balanced nutrition
1	Engineering	Energy Systems	EE 271	12	Studying the availability of using PV arrays in residential & commercial areas
2	Engineering	Material science	EP 217	12	This course introduces the students to Classification of engineering materials, atomic and molecular structure. The course focuses on polymer properties and modification for special applications.
3	Engineering	Introduction to environmental engineering	EP 389	12	The course introduces engineering aspect with complete environmental assessments of the impacts
1	Business	Consumer behavior	BF 746	12	The course focuses on issues related to the behavior of consumption and production and means to rationalize consumption

## 12.5. Publications

**Chemical profiling, biostatic and biocidal dynamics of *Origanum vulgare* L. essential oil (2019)**  
**AMB Express, 9 (1), art. no. 41, . Cited 6 times.**

**Fikry, S., Khalil, N., Salama, O.**

Future University in Egypt

## SDG13 climate Action

### 13.1. Activities

- In 2019, the staff members of the Faculty of Applied Medical Science Technology participated in an **international workshop** on “ Air Pollution” in coordination with UNESCO and Alexandria Governorate.
- The faculty of mass communication produces a short film on a film called “ Devetsia” demonstrating the environmental resources on land, water resources, desert ecosystem services regarding natural health treatments, and ecotourism in sustainable cities.



<https://www.youtube.com/watch?v=sQrc2ufKFC4&list=PLsZ1HNiwxSAPBp9Ff74mHK1NbRVLCp-52&index=2>

### 13.2. Students’ Projects

Project name	Summary
28. Recycling of fabric scrap	The importance of recycling textiles is increasingly being recognized. The purpose. Once in landfills, natural fibers can take hundreds of years to decompose. They may release methane and CO <sub>2</sub> gas into the atmosphere. Additionally, synthetic textiles are designed not to decompose. In the landfill, they may release toxic substances into groundwater and surrounding soil. The synthetic fiber raw materials totally imported from outside as polyester and nylon and the annual consumption is 440 thousand tons and the recycling processes are not applicable, so the new technology for recycling this scrap is value added materials

### 13.3. Courses in the curricula

Faculty	Course name	Course code	SDG-relevancy	Topic
Pharmacy	Environment and sustainability	PMC E01	13	Sustainable ecosystem services
Pharmacy	Phytotherapy	PG 305	13	Sustainable industry of Natural products
Pharmacy	Environment and sustainability	PMC E01	13	Sustainable ecosystem services
Engineering	Pollution control in petrochemical industries	EP 392	13	The course focuses on emissions form petrochemical industries and sustainable control mechanisms
Engineering	Introduction to environmental engineering	EP 389	13	The course introduces engineering aspect with complete environmental assessments of the impacts



## SDG14 Life below water

### 14.1. Activities

Although The topic “life below water” is beyond the interest of Pharous University, The faculty of mass communication produces a short film on a film on Ecotourism and the culture and heritage of villages in upper Egypt. This film is called “Fedalos Anay” or “We Welcome you” . The film addresses the life of these small villages that were droned under water before and currently these villages are saved and sustainable. The film also covers the traditional knowledge particularly for women and its role in day life. These villages after saving are not affected be being previously under water. All infrastructure is retained and sustained.

[dhttps://www.youtube.com/watch?v=D6HwJvQK-Uk&list=PLsZ1HNIwxSAPBp9Ff74mHK1NbRVLCp-52&index=11](https://www.youtube.com/watch?v=D6HwJvQK-Uk&list=PLsZ1HNIwxSAPBp9Ff74mHK1NbRVLCp-52&index=11)

### 14.2. International mobilities

Through MOUs, The faculty of Tourism nominated its candidate to travel to JAML University for training and exploring cultural heritage in indigenous coastal areas and ways and means of using the life under water for tourist attraction attraction particularly in the areas of south Sinai and the Red sea coast.

Name	Title	Faculty- PUA	Host university	Travel Dates
Tamer Mohamed AbdelRaouf Hassan	Lecturer	Faculty of Tourism and Hotel Management	JAMK University Finland	1 June 2019 To 13 June 2019

## SDG 15 Life on Land

Sixty of the world's ecosystem services have been degraded over the past 50 years and we continue devaluing our natural resources at an alarming rate. While many of the effects are felt locally first, the long-term consequences are global and the scale is highly relevant to business, presenting risks and opportunities. To retain the integrity and vitality of natural resources today and for future generations and to ensure long-term socio-economic growth and prosperity, sustainable management of land is key.

### 15.1. Activities

The faculty of mass communication produces a short film on a film called “ Devetsia” demonstrating the environmental resources on land, water resources, desert ecosystem services regarding natural health treatments, and ecotourism in sustainable cities.  
<https://www.youtube.com/watch?v=sQrc2ufKFC4&list=PLsZ1HNIwxSAPBp9Ff74mHK1NbRVLCp-52&index=2>

### 15.2. Courses in curricula

Pharos university is keen to integrate the topic of life on land, the conservation of natural resources and wild life protection to undergraduate students. The following courses are addressing such topics to undergraduates in 3 faculties.

Faculty	Course name	Course code	SDG-relevancy	Topic
Pharmacy	Environment and sustainability	PMC E01	15	Sustainable ecosystem services
Pharmacy	Phytotherapy	PG 305	15	Sustainable industry of Natural products
Tourism	Ecotourism	TM 371	15	Protection of wildlife
Tourism	Tourism Impact and Sustainability	TM 354	15	Conservation and protected areas management
Arts and design	Perception of the Visual Environment	G331	15	Effect of nature on art and artists

## SDG 16 – Peace, Justice and Strong Institutions

### 16.1. Conferences / Workshops:

- The Faculty of Legal Studies and International Relations, in cooperation with the Faculty of Physical Therapy, held a symposium entitled “The Role of Forensic Medicine in Achieving Criminal Justice” on Tuesday, 17 December 2019 at the Student Theatre. The symposium started by discussing the legal aspect of the forensic medicine cases; a point that was



addressed by Prof. Hamam Zahran, the Dean of the Faculty of Legal Studies and International Relations; Dr. Alaa Abd Rabou, a Lecturer at the Criminal Law Department and Mr. Ahmed Shaltwoot, the Vice President of the Court of Cassation. Then, Prof. Maha Ghanem who is specialized in Forensic Medicine at the Faculty of Medicine in Alexandria University spoke about the significant role of forensic medicine in guiding public prosecutors, lawyers and the system of criminal justice to solve crimes and achieve justice. She also discussed many legal cases that she was involved in, due to the nature of her profession. The symposium was attended by members of a large number of judicial institutions, the council of the Lawyers’ Syndicate, prominent lawyers, faculty members, teaching assistants, the faculty undergraduates and alumni.

<https://www.pua.edu.eg/the-role-of-forensic-medicine-in-achieving-criminal-justice/>

- The Faculty of Tourism and Hotel Management organized a seminar on human rights and the attitudes of the responsible tourist on Tuesday, 10 December 2019. The seminar included presentations about the most prominent figures in the field of human rights and the responsible behaviour of the tourist.



<https://www.pua.edu.eg/how-to-be-a-responsible-tourist/>

## 16.2. International Mobilities

Through MOUS, the faculty of legal studies and international relations nominated an associate professor to travel to Aristotle university to spread the notion of water politics and water rights in the national and international law. The candidate delivered few lectures to students and staff of Aristotle university and explored means and ways of communication in the field of human rights.

Name	Title	Faculty- PUA	Host university	Travel Dates
Walid Fahmy	Associate Professor	Faculty of Legal Studies & International Relations Department of Public International Law	Aristotle University Greece	26 May 2019 to 1 June 2019

## 16.3. Courses in the Curricula

The following courses for undergraduates are introducing to students peace and justice issues in 3 the 3 relevant faculties as follows:

Faculty	Course name	Course code	SDG-relevancy	Topic
Tourism	Ethics and Human Rights	GEN 103	16	Well being and living standards
Tourism	Legal Issues in Tourism and Hospitality	THM 245	16	Tourism sustainability and legalities
Law	Property and Real Rights Law	LV 07	16	Justice concepts and human rights
Law	Labor and social security law	LV 06	16	Social security issues and reduces inequalities
Business	Islamic finance and sustainability	BF858	16	The course describes the sustainability of Financing rules in Islam.

## SDG 17 Partnership for the goal

### 17.1. Conferences/ Workshops

#### Conferences/ Workshops Relevant to SDG 3

- The faculty of Dentistry participated in the “AEEDC Cairo Education Conference and Exhibition” which was held at the Royal Maxim Palace Kempinski Hotel in the 5th Settlement – Cairo on 12-14 December. The AEEDC Cairo Education Conference and Exhibition is considered one of the highly specialized scientific and educational events dedicated to dentistry professionals in Egypt and the wider MENA region. It also discusses the most important issues and the latest developments in the field. The PUA dental students visited the AEEDC exhibition where they got apprised of the state-of-the-art dental equipment and materials. It is worth mentioning that PUA dental students presented many research papers in this conference.



<https://www.pua.edu.eg/a-visit-to-aedc-education-cairo-conference-and-exhibition/>

- The faculty of Dentistry participated in the Egyptian Dental Exhibition (EDE 2020) on Thursday, 13 February 2020 in at Cairo International Convention Centre (CICC). The trip aimed at apprising the PUA delegation which included a number of faculty members, teaching assistants and students of different academic years of the state-of-the art equipment and technology in general and in the field of dentistry in particular.



<https://www.pua.edu.eg/the-faculty-of-dentistry-organized-a-trip-to-the-egyptian-dental-exhibition/>

- On 21 March 2019, the faculty of Pharmacy organized a workshop on”



First Aid”. The workshop addressed the general procedures of first aid for casualties and how to deal with exceptional cases for saving lives e.g handling burns, Fainting and cases of artificial respiration

- The Faculty of Pharmacy and Drug Manufacturing at Pharos University organized a symposium entitled “OTC from A to Z” on Tuesday, 3 March 2020. The lecture was delivered by Dr. Magdy Shalash, the Director of El Taybey Academy for Pharmaceutical Training and Dr. Sally Ibrahim, the Head OTC Department at El Taybey Academy for Pharmaceutical Training. It is worth mentioning that the symposium discussed the following points: How the pharmacist deals with different cases of chronic Arthritis? How to dispense medicines without medical prescription and what are these OTC drugs? What are the cases that should be directly referred to a physician not a pharmacist?  
<https://www.pua.edu.eg/otc-from-a-to-z-symposium/od>
- In cooperation with Eva Pharma company, The faculty of Pharmacy organized a campaign on healthy nutrition. Within this event, a side activity was held to measure the percent of body fats and the body water content using “Inbody “ devices. . A lecture was delivered to raise the awareness of students on healthy food and nutritional healthy trends
- On 8 march 2019, the faculty of Pharmacy organized a to the local community in EZBET Al Fetaa on general health conditions campaign. The campaign included measuring the blood sugar level, body fats and how to avoid hypertension. The campaign included also awareness about cancer and potential occurrence.
- The Faculty of Pharmacy held its biannual Conference on Pharmacology in the spring semester of the academic year 2019-2020. The conference was carried out under the auspices of the president of the university, and is supported by several pharmaceutical companies and AUF agency of France. The conference was attended by about 300 expert and researcher, where 102 scientific papers were presented, and published in



the conference booklet after being reviewed. International attendees were from France, Finland, Sweden, and Canada. Selected scientific presentations in the conference included:

- Nutrition in Clinical Practice
- The Road from Pharmaceutical Sciences to Patient Care Approach
- Vaccine Nanotechnology; Frontiers and Challenges
- Antibiotic Resistance: A Global Crisis That Requires Out of- The-Box Solutions
- Advanced Therapeutic Approaches in Managing Diabetic Foot Ulcer
- Burden of Helicobacter pylori Infections and Associated Risk Factors among Cases of Iron Deficiency Anemia in Egypt
- Public Knowledge and Attitudes Towards Antibiotic Usage: A Cross-Sectional Study Among the General Public in Alexandria
- Cross Sectional Study: General Features of Food Allergy in Alexandria
- The Impact of Rising Drug Prices in Egypt
- The Future of Pharma from Evolution to Revolution.
- Documenting Mistakes in Governmental Hospital Pharmacies in Alexandria, Egypt

<https://www.pua.edu.eg/icmaps/>

- On 22 November 2019, the faculty of pharmacy organized a campaign on heart diseases and the relation between the function of the heart and the rest of the body organs. The campaign concentrated on the chronic heart diseases and how to deal with them and avoid them.



- The faculty of Physical Therapy organized a seminar entitled “Advanced Management of Spinal Cord Injuries” on Tuesday, 10 December 2019. The seminar’s keynote speaker was Dr. Mahmoud Yasser, a Spinal and Orthopedic Surgery Consultant who addressed the following points: The advanced treatment methods of spinal cord injuries. Showing examples of x-rays of people who had accidents. The role of physical therapy in following cases after surgery and helping in patients’ rehabilitation.



<https://www.pua.edu.eg/advanced-management-of-spinal-cord-injuries/>

- The faculty of Physical Therapy organized the 1st scientific forum of “Biomechanics” on Tuesday, 24 December 2019 in the Student Theater. The forum included 15 biomechanical models. These models showed a cross section of the body explaining the relation between the muscles and bones and its impact on the body mechanics. The models also showed the surfaces and axes that joints of the body move around. In addition, the representatives of each group of students talked about their projects and the materials used in this project. It is worth mentioning that the students took the principles of sustainable development into consideration by recycling old materials used in the design of previous models, including plastic spoons, empty cups, fiber and wood.

<https://www.pua.edu.eg/the-faculty-of-physical-therapy-hold-the-first-scientific-forum-of-biomechanics/>

- The Faculty of Applied Health Sciences Technology organized a symposium to raise the awareness of coronavirus on Tuesday, 10 March 2020. The symposium was delivered by Dr. Mohamed Salah El Din, an Assistant Professor of Biochemistry and Immunity in the Medical Laboratory Department. The symposium explained the modes of the coronavirus transmission, its symptoms and methods of protection.



<https://www.pua.edu.eg/the-faculty-of-applied-health-sciences-technology-organized-a-symposium-about-coronavirus/>

- Students of Medical Equipment Maintenance Department (Faculty of Applied Health Sciences Technology) have won the third place in the “Pandemic TechHack – Egypt 2020” Competition out of 40 participating ideas which was held on Tuesday, 15 April 2020. The competition is a part of “The Egyptian Virtual Hackathon Against Coronavirus” which is a national initiative to unite efforts and resources using technology and science to: Confront the epidemic. Help reduce the spread of the virus in Egypt.



Find the technological solutions necessary for dealing with the resulting risks in the case of virus outbreak.

It is worth mentioning that this competition is one of the innovation and entrepreneurship competitions which are managed under the supervision of the Academy of Scientific Research and Technology, the U.S Embassy, the Egyptian Ministry of Health and Population and the American University in Cairo.



The participating students developed a Smart Coronavirus Mask “SCM” using a 3D design program. The SCM is for protection and early detection of COVID-19 and also sending the results to a mobile application that can automatically display and update the health status of the mask user.

<https://www.pua.edu.eg/pharos-university-won-the-third-place-in-pandemic-techhack-egypt-2020-competition/>

- The faculty of Mass Communication organized a symposium entitled “ The Role of Media in Combating Drug Abuse” on Tuesday, 3 December 2019. In the symposium the psychological and physical effects of drugs on the addict was discussed. The types of drugs and the general dangers of drug abuse and addiction and its psychological effects in particular were also highlighted. The following topics were discussed: the constructive and destructive roles of mass media in this issue, the procedures that should be followed in addressing this issue. At the last section of the symposium, freshmen presented some ideas of a campaign to be launched under the name of “Towards No Drug Abuse” accompanied by some videos.



<https://www.pua.edu.eg/the-role-of-media-in-combating-drug-abuse/>

## Conferences/ Workshops Relevant to SDG 9:

- The [Petrochemical Engineering Department](#) (Faculty of Engineering) announces the start of a number of online **summer training courses**. The three-week courses will start on Saturday, **15 August 2020** and the registration opens on Monday, 10 August 2020. It is worth mentioning that the first training course entitles “Trouble shooting in Petrochemical plants” and will be attended by a number of experienced professionals in the field of petrochemical industry.



<https://www.pua.edu.eg/the-petrochemical-engineering-department-holds-the-summer-training-courses/>

- On October 10<sup>th</sup> 2019, staff and students of the faculty of engineering had a field visit to Alex Electricity Distribution Company to explore electrical energy distribution and energy conservation practices, which is inline with SDG 9 (Industry, Innovation and infrast.) and SDG 7 Affordable energy
- ON December 8, 2019, staff and students of the faculty of engineering had a field visit to Sidi Kerier petrochemical company (SidPec), to learn more about polymers and its production, and the quality aspects associated with this industry.
- On December 12 2019, 2019, staff and students of the faculty of engineering had a field visit to Alexandria Company for fertilizers to explore more about this industry, and its production with the minimum use of energy . , which is inline with SDG 9 (Industry, Innovation and infrast.)



- During the period of November 2019, the Faculty of Engineering organized a workshop in cooperation with

- the Plastic Technology Center in Alexandria ,
- ministry of trade and industry,
- SEED project of the USAID,
- Cabinet of chemical industries, and
- The Value Chain Development Center of the Nile Pioneers Initiative

The workshop title was " Degradable plastics and additive technology". The aim of the project was spreading the awareness of plastic manufacturers in Murgham Complex, on additive technology for degradable plastics.

The workshop, dealt with new technologies in using additives to produce plastics and biodegradable paints instead of traditional plastics, and how to motivate and encourage institutions and companies to use it and reduce the cost of its production. A number of participating companies presented some studies for their production of plastic and biodegradable paints in the presence of a number of Industrial representatives

### **Conferences/ Workshops Relevant to SDG 11:**

- In the academic year 2019- 2020, Staff members of the faculty of Applied Medical Sciences Technology coordinated **a workshop** " Sustainable clean Environment" . This workshop was carried out jointly with Alexandria Governorate, Kim Company for petroleum services, Ministry of Environment.

### **Conferences/ Workshops Relevant to SDG 12:**

- On December 10, 2019 the faculty of Engineering organized a workshop on "Sustainable Development" . The workshop included It included defining the concept of sustainable development, how to utilize and preserve resources, and the state's vision for implementing sustainable development
- On April 2019 through the 17th , and Within the framework of Pharos University's interest in contributing to the achievement of sustainable development goals in education and scientific research, Pharos University had the honor to receive Dr. Fredrik Gröndahl - Head of the Department of Sustainable Development and Environmental Science and Engineering at the Royal Institute of Technology in Sweden KTH. The workshop began daily with a general lecture on the general sustainability concepts. The lectures delivered covered topics on climate change, organic pollutants, the development of the concept of sustainability in general, as well as its applications in the field of transportation

### **Conferences/ Workshops Relevant to SDG 16:**

- The **Faculty of Legal Studies and International Relations**, in cooperation with the **Faculty of Physical Therapy**, held a symposium entitled **“The Role of Forensic Medicine in Achieving Criminal Justice”** on **Tuesday, 17 December 2019** at the Student Theatre. The symposium started by discussing the legal aspect of the forensic medicine cases; a point that was addressed by Prof. Hamam Zahran, the Dean of the Faculty of Legal Studies and International Relations; Dr. Alaa Abd Rabou, a Lecturer at the Criminal Law Department and Mr. Ahmed Shaltwoot, the Vice President of the Court of Cassation. Then, Prof. Maha Ghanem who is specialized in Forensic Medicine at the Faculty of Medicine in Alexandria University spoke about the significant role of forensic medicine in guiding public prosecutors, lawyers and the system of criminal justice to solve crimes and achieve justice. She also discussed many legal cases that she was involved in, due to the nature of her profession. The symposium was attended by members of a large number of judicial institutions, the council of the Lawyers’ Syndicate, prominent lawyers, faculty members, teaching assistants, the faculty undergraduates and alumni.



<https://www.pua.edu.eg/the-role-of-forensic-medicine-in-achieving-criminal-justice/>

- The Faculty of Tourism and Hotel Management organized a seminar on human rights and the attitudes of the responsible tourist on Tuesday, 10 December 2019. The seminar included presentations about the most prominent figures in the field of human rights and the responsible behaviour of the tourist.



<https://www.pua.edu.eg/how-to-be-a-responsible-tourist/>

## 17.2 Activities Related to SDGs

### Activities of SDG 1 :

- The **faculty of Tourism and Hotel Management** organized a **humanitarian convoy** to deliver blankets to some of the needy families in Abdel Qader District families. This

convoy was launched on Tuesday, **17 December 2019** in cooperation with the Social Activities Committee affiliated to the Student Activities Department and Elestkrar Charity. After studying each family's situation, the students bought 90 blankets and distributed them to the needy families to alleviate their burden.



<https://www.pua.edu.eg/pua-humanitarian-convoy/>

- **The Student Activities Department** organized a humanitarian aid convoy on **24/1/2020** to deliver blankets to Abees District in Alexandria. The organization of this convoy was managed in coordination with the Ministry of Social Solidarity and Alexandria Governorate.



It is worth mentioning that a large number of students from **different faculties** participated in this convoy. In addition to that, the convoy was accompanied by supervisors from the Security and Student Activities departments, Prof. Hesham El Shimy, the Student Activities Leader and Prof. Ramadan Abo El Ala, the PUA Vice President. Moreover, Dr. Jackline Azar, the Deputy Governor of Alexandria was keen to participate and follow up the proceedings of this convoy where she expressed her admiration for the university's activities in the field of community service and the students' behavior.

<https://www.pua.edu.eg/pharos-university-sent-a-humanitarian-aid-convoy-to-abees-district-in-alexandria/>

- **The Student Activities Department** organized **five humanitarian aid convoys** to deliver blankets to the needy areas in both the east and west of Alexandria. These convoys were launched on **6 and 8 February 2020**, in coordination with a number of public charity organizations, including Rowad Elkheir, Elmotadaron, Mojeeb Elsaleen which located in Rabaa Elnasriya, Abees neighbourhood as well as Elestkrar and Abdelkader charities located in Toshka, Alamreya neighbourhood. It is worth mentioning that a large number of students from different faculties participated in these convoys. The coordination of these convoys was managed by both the personnel of the Student Activities Department and Prof. Ramadan Abu El-Ala, the Vice President of Community Service and Environment Development Affairs.



<https://www.pua.edu.eg/pua-sent-aid-convoys-to-the-needy-in-eastern-and-western-areas-of-alexandria/>

- In the light of the **Student Activities Plan** set for the academic year 2019-2020, **Dream Team, one of the PUA student-led clubs**, organized a **humanitarian aid convoy** to deliver blankets to one of the needy areas in Alexandria. This was held on Friday, **20 December 2019**. The coordination of the convoy was managed in collaboration with Tarek El Kheir Charity. Before sending the convoy, the PUA students made a survey about the socio-economic status of the residents. Based on the findings of this survey, blankets were distributed among widows and orphans of the needy families.



<https://www.pua.edu.eg/dream-team-organized-a-humanitarian-aid-convoy-2/>

The Faculty of Pharmacy held its Charity Market day under the auspices of the Student Activities Department, on Tuesday 16/4/2019 at the entrance foyer of the faculty. The activity included distributing goods in low prices for the most needed community dwellers.

### Activities of SDG 3

- The faculty of Pharmacy has established a specialized center for international publication consultation and nanotechnology in 2019. Since its opening, the center carried out about 200 research consultation including electronic ones. The manager of the center has signed 7 international MOUs for international publication, one of which is already published in the highest 5% ranked journals according to JCR. The MOUs are with:
  - Laboratory for Molecular Design of Pharmaceutics, Faculty of Pharmaceutical Sciences,
  - Hokkaido University Japan
  - Department of Internal Medicine and Medical Specialties, University of Genoa, Genoa, Italy
  - Department of pharmaceutics; faculty of pharmacy; Damanhur University
  - Department of pharmaceutics; Alexandria university
  - <https://www.pua.edu.eg/continuing-education/international-publication-nanotechnology-consultation-center-incc/>

- PUA-Faculty of Pharmacy participates in the alliance with a subproject entitled “Galanthamine / Chitosan Complex Nanoparticles: Form Bench to Bedside”. The current project aims at conducting a complete pharmacokinetic/pharmacodynamic study in Alzheimer’s disease animal model; which should be the starting point of transforming this prototype nanoparticle system from bench to bedside, offering better patient compliance, therapeutic outcomes, and decreased galantamine dose; thus lower production cost.

<https://www.pua.edu.eg/continuing-education/international-publication-nanotechnology-consultation-center-incc/>

- The Nutrition Department at the *Faculty of Allied Medical Sciences* launched “Healthy Campus Initiative” on Tuesday, 9 April, 2019. This initiative aimed at highlighting the profound impact of nutritional knowledge in eradicating health illiteracy. According to the findings of the researches conducted last year which showed low health and nutrition literacy, the main objective of this study is to raise the students’ nutritional and health awareness through informing the students the basic nutrients, their sources and functions as well as promoting conscious eating habits by using models of dietary guidance systems and healthy eating; traffic light system and healthy eating pyramid.

<https://www.pua.edu.eg/the-faculty-of-allied-medical-sciences-launched-a-healthy-campus-initiative/>

- The Faculty of Pharmacy held an awareness campaign on Blood pressure and heart diseases, and Osteoporosis among students of Pharos University on 5/3/2019, 22/11/2019 and 30/11/2019 respectively. Blood pressure and Blood sugar levels were measured during the campaign and used to serve the awareness activity.

<https://www.pua.edu.eg/the-faculty-of-allied-medical-sciences-launched-a-healthy-campus-initiative/>

- The Faculty of Pharmacy has established a project entitled : Integrated Pharmaceutical Alliance (IPA); towards production of technology based Egyptian Pharmaceutical products. The alliance is funded by the Academy of Scientific Research and Technology under the Egypt Research and Technology Alliances (EG-KTA) Program. Its general objective is the integration of pharmaceutical industry with academia, public sectors and Non-Governmental Organization (NGO) to deepen local manufacturing in pharmaceutical industries and increase its competitiveness.



**Integrated Pharmaceutical Alliance**



## 4- Pharos University in Alexandria (PUA)

Pharos University (PUA)  
Faculty of Pharmacy & Drug Manufacturing  
www.pua.edu.eg/ | pua@pharos.edu.eg/ | 0102

**Dr. Maged El Ghazouly,**  
Dean & Prof. of Pharmacognosy, Faculty of Pharmacy  
maged.elghazouly@pua.edu.eg  
+20 1001708666

- Production of Galantamine/ chitosan complex Nanoparticles




G11-loaded CC-NP2 nanoparticles (Pharos)




**Integrated Pharmaceutical Alliance (IPA)**

Applicant: **Cairo University Faculty of Pharmacy**

Knowledge Partners:










Industrial Partners:




Private Sector:





ACKNOWLEDGMENT: This alliance is funded by the Academy of Scientific Research and Technology under the "Egypt Research and Technology Alliances (EG-KTA) Program" <http://www.asrt.gov.eg/eg-kta>

**Integrated Pharmaceutical Alliance (IPA)**

Towards production of technology based Egyptian Pharmaceutical products



Knowledge a Technology Alliance

The alliance constitutes from different partners;

- 4 academic partners : German university( GUC), Pharos University in Alexandria (PUA) National Research Center (NRC), Arab Academy of Science, Technology and Martinme
- 5 industrial partners : (El-Nasr, Memphis, Health Tech & ATOS),
- 2 from public sectors
- (NODCAR & Vacsera) and one NGO (Misr el Kheir)

- PUA-Faculty of Pharmacy participates in the alliance with a subproject entitled "Galanthamine / Chitosan Complex Nanoparticles: Form Bench to Bedside". The current project aims at conducting a complete pharmacokinetic/pharmacodynamic study in Alzheimer's disease animal model; which should be the starting point of transforming this prototype nanoparticle system from bench to bedside, offering better patient



compliance, therapeutic outcomes, and decreased galantamine dose; thus lower production cost.

- The faculty of Dentistry sent an aid convoy teemed with dental personnel and supplies, to Al Hadayah Nursing Home on Wednesday, 26 February 2020. The PUA dental staff examined more than 100 male and female patients of the residents of the nursing home and provided them with free of charge treatment. The PUA dentists also gave the residents some tips of how to take care of their teeth. They also gave them toothpastes and tooth brushes as gifts from the faculty of Dentistry.



<https://www.pua.edu.eg/a-medical-aid-convoy-to-al-hadayah-nursing-home/>

- The faculty of Pharmacy and Drug Manufacturing launched a campaign to raise awareness about vitamin D on Tuesday, 10 December 2019 in the foyer of the faculty. This was held in cooperation with the faculty scientific committee. During the campaign, a number of leaflets that had many information about Vitamin D and its importance, were distributed. A group of the faculty students also introduced the faculty administrative staff and students of different faculties to the importance of Vitamin D, how to monitor its level in the body, the symptoms of its deficiency and the risks of increasing in its level in the body.



<https://www.pua.edu.eg/why-do-you-need-vitamin-d/>

- The faculty of Pharmacy and Drug Manufacturing organized a field trip to El Miri Hospital for the fourth-year students. The aim of the trip was to introduce the students to the clinical pharmacy applications in the hospital. The students visited the oncology department where chemotherapy



drugs are prepared for patients, the radiotherapy department, the dialysis unit and the Total Parenteral Nutrition (TPN) Unit. The supervisors of these departments explained the role of hospital pharmacist in different departments and the procedures followed to ensure the quality of pharmacy services as well as the preventive measures to ensure occupational health in different departments.

<https://www.pua.edu.eg/a-field-trip-to-el-miri-hospital/>

- The faculty of Physical Therapy organized a trip to the National Institute of Neuromotor System on Thursday, 19 December 2019. The trip aimed to provide the students with the opportunity to identify different cases of mobility impairment, how to treat and follow them up. Firstly, the students took a tour in the institute to visit the neurological rehabilitation unit, the orthopedic unit and the pediatrics unit. Then, they went to the physical therapy building and visited the hydrotherapy department; a section which the institute is distinguished by all over Egypt. At the end of this tour, the students were introduced to the Splints and Artificial Limbs Factory and their different manufacturing phases.

<https://www.pua.edu.eg/a-trip-to-the-national-institute-of-neuromotor-system/>

- The faculty of Physical Therapy, in cooperation with Sonaa Al-Hayat student club, organized a visit to Mohamed Ragab Nursing Home on Tuesday, 10 December 2019. The students spent quality time with the residents and did many activities with them. At the end of the visit, the students distributed gifts, including mus'hafs, rosaries and decorated colored cups.

<https://www.pua.edu.eg/a-visit-to-mohamed-ragab-nursing-home/>



- The Faculty of Applied Health Sciences Technology organized a field trip for the students of the third and fourth year classes to El Shatby University Hospital for Children. This was held on Wednesday, 26 February 2020. During the visit, Associate Prof. Maha Youssef, the Head of the Hematology Unit escorted the delegation in a tour around the hospital different departments, including the Endocrinology Department, the Gastroenterology Department, the Hematology Department, the Dialysis Unit and the Reception. At the end of the visit, the delegation visited the university blood bank where the students



were acquainted with the blood transfusion process, the apheresis technology and the apparatus used in it.

<https://www.pua.edu.eg/a-field-trip-to-el-shatby-university-hospital-for-children/>

- The Faculty of Applied Health Sciences Technology organized a campaign to raise the awareness of the faculty students about vitamin (D) deficiency on Tuesday, 10 March 2020. The campaign shed light on the importance of vitamin (D), its nutritional sources, the causes of its deficiency and deficiency tests. During the campaign, food and drinks rich with vitamin (D) were distributed.



<https://www.pua.edu.eg/raising-awareness-of-vitamin-d-deficiency/>

- The faculty of Tourism and Hotel Management made a video in Spanish for giving moral support to coronavirus patients in Egypt and Spain and urging them to stay home. A session was held on Saturday, 25 April 2020 to display the video which is considered a practical application of the course of “Spanish as a Second Language”.

<https://www.pua.edu.eg/a-video-for-supporting-coronavirus-patients-in-egypt-and-spain/>

Video link:

[https://www.youtube.com/watch?reload=9&v=02UzstHuHs&feature=emb\\_title](https://www.youtube.com/watch?reload=9&v=02UzstHuHs&feature=emb_title)

- The faculty of mass communication produces a short film on a film called “Devetsia” demonstrating the environmental resources on land, water resources, desert ecosystem services regarding natural health treatments, and ecotourism in sustainable cities.
- <https://www.youtube.com/watch?v=sQrc2ufKFC4&list=PLsZ1HNiwxSAPBp9Ff74mHK1NbRVLCp-52&index=2>

### Activities of SDG 6:

On Tuesday 26 November 2019, the faculty of Engineering organized a symposium on “Safe disposal of sewage water and its impact and environmental protection”. The symposium

addressed the challenges facing Alexandria governorate and the stages of safe disposal of sewage water and its sources, whether from agricultural drainage, industrial drainage, or human drainage. The symposium also addressed the modern methods currently used to reuse that water and potential extracts such as fertilizers and road asphalt

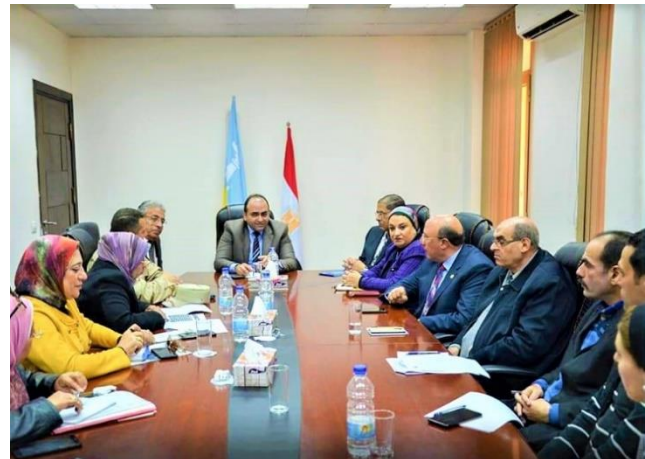
### Activities of SDG 7:

- The Petrochemical Engineering Department (Faculty of Engineering), in cooperation with the PUA student chapter of the Society of Petroleum Engineers (SPE) at the Faculty of Engineering, held a symposium about the future of petrochemicals and chemical engineering on Tuesday, 10 March 2020. The symposium was given by Eng. Karim Ezzat, the Head of the Chemical Engineering Department at the Syndicate of Engineers in Alexandria. Many important topics were discussed in the symposium, including:
  - The relationship between petrochemical engineering and chemical engineering.
  - Job opportunities in the field of petrochemical engineering.
  - The syndicate's services for students.
  - The considerable value of field training for the engineering student.

<https://www.pua.edu.eg/the-future-of-petrochemicals-and-chemical-engineering/>

### Activities of SDG 10:

- The faculty of Mass Communication, organized a celebration for orphans on Wednesday, 18 December 2019 under the name of "Yalla Nsaeed" (Let's Help Each Other). The event started with playing DJ music, then the children played various games with their favorite cartoon character toys and received food and sweets. The event ended by distributing gifts among the orphans who were very eager to continue dancing with before leaving the faculty.



<https://www.pua.edu.eg/yalla-nsaeed/>

- The faculty of mass communication produces a short film on deafness and hearing impairment "Do Understand ME" which addresses different activities of persons with disabilities and how to include them day to day living conditions.

<https://www.youtube.com/watch?v=HwoLx5Q3gvE&list=PLsZ1HNiwxSAPBp9Ff74mHK1NbRVLCp-52&index=8>

## Activities of SDG 11:

- The Community Service and Environment Development Affairs and the Community Service and Environmental Development Centre (CSED), Pharos University participated in a meeting about the “Live Green” initiative. The meeting was held in Alexandria Governorate Office on Wednesday, 12 February 2020. The meeting aimed to discuss the mechanisms to apply the “Live Green” initiative launched by the President of Egypt to raise environmental awareness in Alexandria. The importance of the consultative role of Pharos University which came within the framework of the government keenness to achieve cooperation and integration by taking advantage of the experiences of the scientific bodies in Alexandria and working hand in hand for the benefit of the governorate was stressed. A study on “Harmonic Mechanisms for Treating all Types of Wastewater to Irrigate a Sustainable Green Belt to Protect the Vicinity of Lake Mariout.” Was presented by CSED representative. It is worth mentioning that the study impressed all the attendees and it was stressed upon the need for adopting that study by the governorate and other authorities at the local and central levels.



- <https://www.pua.edu.eg/pharos-contributions-in-the-live-green-presidential-initiative/>
- The faculty of mass communication produces a short film on a film on Ecotourism on the culture and heritage of villages in upper Egypt and called “Fedalos Anay” or “We Welcome you” . The film addresses the life of these small villages that were droned under water before and currently after saving it is sustainable. The film also covers the traditional knowledge particularly for women and its role in he day to day life.
- <https://www.youtube.com/watch?v=D6HwJvQK-Uk&list=PLsZ1HNiwxSAPBp9Ff74mHK1NbRVLCp-52&index=11>
- On 22 October 2019, staff and students of the faculty of engineering had a field visit to Transport and Engineering company to explore the sustainable use of raw materials e.g. oils, strands, reuse of water and they had a presentation on the standard procedures and methodologies for testing the materials used in this industry

## Activities of SDG 12:

- The university has a mechanism for handling solid wastes and hazardous substances. This is carried out according to the instructions of the maintenance



department at the university and the university technicians. The directory of environmental affairs at the university takes the responsibility of supplying all the material needed for handling the wastes, e.g.. gloves, masks, gowns, as well special safety boxes (red in color) , where all the sharp materials are disposed. The experimental animal remains are collected in special bags and placed in a refrigerator till collected. The process of disposal starts by separating the wastes in place, and placing them in the boxes identified till the collection stage and final disposal

- The university has signed two binding contracts with specialized companies to deal with the hazardous wastes includes wastes form labs and clinics. These companies were selected according to their environmental portfolio that ensure sustainability ongoing practices. A copy of these contracts are in Appendix 1
- All the procedures of disposing solid and liquid wastes are registered in the annual Environmental university portfolio that identify the number of employees, the number of faculties and departments, the number of clinics, types of wastes and date production and collection. This portfolio is registered at the university for internal use, and at the governorate of Alexandria for assessments and monitoring. (Appendix 2)

#### **Activities of SDG 13:**

- In 2019, the staff members of the Faculty of Applied Medical Science Technology participated in an international workshop on “ Air Pollution” in coordination with UNESCO and Alexandria Governorate.
- The faculty of mass communication produces a short film on a film called “ Devetsia” demonstrating the environmental resources on land, water resources, desert ecosystem services regarding natural health treatments, and ecotourism in sustainable cities.

<https://www.youtube.com/watch?v=sQrc2ufKFC4&list=PLsZ1HNiwxSAPBp9Ff74mHK1NbRVLCp-52&index=2>

#### **Activities of SDG 14:**

Although The topic “life below water” is beyond the interest of Pharous University, The faculty of mass communication produces a short film on a film on Ecotourism and the culture and heritage of villages in upper Egypt. This film is called “Fedalos Anay” or “We Welcome you” . The film addresses the life of these small villages that were droned under water before and currently these villages are saved and sustainable. The film also covers the traditional knowledge particularly for women and its role in day life. These villages after saving are not affected be being previously under water. All infrastructure is retained and sustained.

[dhttps://www.youtube.com/watch?v=D6HwJvQK-Uk&list=PLsZ1HNiwxSAPBp9Ff74mHK1NbRVLCp-52&index=11](https://www.youtube.com/watch?v=D6HwJvQK-Uk&list=PLsZ1HNiwxSAPBp9Ff74mHK1NbRVLCp-52&index=11)

## Activities of SDG 15:

The faculty of mass communication produces a short film on a film called “ Devetsia” demonstrating the environmental resources on land, water resources, desert ecosystem services regarding natural health treatments, and ecotourism in sustainable cities.

<https://www.youtube.com/watch?v=sQrc2ufKFC4&list=PLsZ1HNiwxSAPBp9Ff74mHK1NbRVLCp-52&index=2>

### 17.3. Cooperation with Hospitals, NGOs and Private sector

- Pharos University cooperates with governmental and private national hospitals that belongs to the Ministry of Health in Alexandria and Beheria governorates. Training of students of the faculties of Pharmacy, dentistry, Applied health sciences and technology , and physical therapy are held in such hospitals.

List of governmental and Private hospitals in Alexandria and Beheria Governorates that cooperated with Pharos University for t students’ raining and internships

Hospital Name	Purpose
Armed Forces Hospital- Mustafa Kamel	Internships
Naval Forces Hospital	Internships
General Military Hospital	Internships
Institute of Medical research hospital	Training and internships
Faculty of Medicine Hospital of Alexandria University	Training and research
America Hospital	Training
Ahmed Maher Hospital	Students Projects
Abou Kir Hospital	Training
Gomhoria Hospital	Training
El Qasr El Ainy Hospital	Training
Dekernis Hospital	Training
Police Hospital	Training
Abou Homous Hospital	Training
Wenget Hospital	Training
El Menshawy Hospital	Training
57375 Hostital	Students activities
Burg El Arab Hospital	Students activities

- Cooperation with Ministers and governmental agencies  
Pharos university cooperates with ministries and national directorates in the health

List of Ministries and National Directorates in the health sector that Pharos University cooperated with for implementing Students’ community projects.

Institute of Cultural Affairs	Students Projects
Education Directorate – Alexandria Governorate, Ministry of education	Community service projects
Education Directorate – Beheria Governorate,	Community service projects



Ministry of education	
Health Directorate – Ministry of Health	Community service projects
Cairo University	Research
Alexandria University	Research
Al Azhar University	Research Project
Menia University	Research Project
Academy of Science and Technology	Research Project
High Institute of Public Health	Research Project

- Pharos University cooperates with NGOs for implementing Students' community projects. Below is the List of NGOs that Pharos University Cooperates with for Community Service Projects

Egyptian Network for Research Ethics Committees	Research Project
Naba'a Al Hayat Foundation	Community service projects
Mojeeb Al Salayen Foundation	Community service projects
Al Staqrar Foundation	Community service projects
Kafalat Al Yateem Foundation at Fata neighborhood	Community service projects
Al Qalaa for Community Development.	Community service projects
Eleen ElGaria association	Community service projects
Abdel Kadr Association	Community service projects
Tarek Charity Association (Mustafa Kamel)	Community service projects
Abu Masoud Suburb (Amiria)	Community service projects
Ayadi Mostakbal medical center (NGO)	Training
Omda Development Association (NGO)	Students Projects
Association of community based rehabilitation for disabled children (NGO)	Students Projects
Red Crescent Association (Mohandeseen)	

- Cooperation with Private sector

Private sector is an important sector that Pharos university is keen to cooperate with for different purposes, mainly for meeting, conferences and workshops. Such meetings allow the recognition of new trends in the local and regional market, and allow meeting the market needs. Below is the List of private sectors That Pharos University Cooperates with

Company name	Type of cooperation
Eva Pharma	Participation in Conference
Innova Pharma	Participation in Conference
Hygint Pharmaceutical company Ltd.	Participation in Conference
Goweily Academy	Workshops
Andalusia Hospital (Private Hospital)	Students activities
El Yousr Hospital (private Hospital)	Students Projects
Fawzy Moaaz Hospital (Private Hospital)	Students Projects
Carrefour	Partnership

Easy Care Company	Partnership
Mena For Touristic and Real Estate Development	Partnership
Alexandria Company For Pharmaceuticals	Partnership
Khalil Pharmacies	Students Projects
Seif Pharmacies	Students Projects
SABshire for Pharmaceutical industries	Students Projects
Alexandria Company for Pharmaceutical industries	Students Projects
Pharco Company	Partnership
ABB Electrical Industries (ABB Arab) S.A.E	Partnership

## 17.4. Local MOUS

### 1. In the health sector- Hospitals

In 2019, the faculty Pharmacy have signed several MOUS for cooperation between Pharos University and hospitals and pharmaceutical companies in Egypt with the aim of students training for the completion of their gradation these hospitals are:

Hospital Name with signed agreements	No of students	Company name	No of students
Mostafa Kamel Hospital	102	Pharco company	20
Alexandria University Hospital	102	Egyptian Pharmaceutical Company	16
Ras El Tin Hospital	71	El Burg for pharmaceutical industrial	15
Ministry of health hospitals	41	Seif Pharma	15
El Salama Hospital	40		
57357 Hospital Cairo	20		
57357 Hospital Tanta	71		
Tanta Center for cancer	10		
International center for Cardiology (ICC)	10		
Alexandria Vascular center AVC	10		
San Mary Hospital- Alex	12		
Zamzam Hospital - Alex	2		

### 2. In the field of industry and Industrial Companies

- The Egyptian Ethylene & Derivatives Company (ETHYDCO).
- AlexFert Alexandria company for fertilizers
- Sidi Kerir Petrochemicals Co. (Sidpec)
- Egyptian Petrochemicals Company
- Alex Electricity Distribution Company
- EPROM - Egyptian Projects Operation & Maintenance
- Egypt Experts for Software and Hardware
- Mosahamet El Behera

### 3. IN THE FIELD OF ARCHITECTURAL, HERITAGE AND ARTS

Training site and company Names	CONTACT EMAILS
مكتب سعود عمارة وتخطيط Saud office for architecture and planning	HSEOUDY@SEOUDY.NET
شركة الديوان للمقاولات Dewan Company for constructions	GAMALOMAR302@GMAIL.COM
مكتب مهندس أحمد محمود فرغلى للمقاولات المتكاملة Office of Eng. Mahnoud Farghaly for integrated construction	ENG AHMEDPRIVATE@GMAIL.COM
قصر السلام El Salam Palace	RMADANSADEED@GMAIL.COM
شركة بيلرز للإستثمار العقارى والمقاولات Pillars for construction	PILLARSFORCONSTRUCTION@GMAIL.COM
Alexa group	QC@ALEXAGROUP.ORY
office of design	MAHMOUDELKHATIBDESIGN87@GMAIL.COM
Sky line orouba	MAHINOOR.MAHMOUD@OROUBAMISR.COM
خالد أمين مصطفى هلال للمقاولات والتوريدات العمومية KAMH for constructions and general supplies	IBRAHIM.MAHMOUD9994@GMAIL.COM
مطبعة الفانار El Fanar press	ELFANAR_PRESS@GMAIL.COM
مكتب حاتم زقزوق للعمارة والأنشات Hazem Zakzouk for architecture and construction	ARCHHMZ@GMAIL.COM
شركة بيت فياض Fayad house company	FAYAD_BUSINESS@HOTMAIL.COM
شركة بي أو سي للمقاولات العامة B and C for general constructions	KH_POC@YAHOO.COM
Avenue for interior design	AVENUEFORINTERIORDESIGN@YAHOO.COM
easy build	MAHMOUDSASI1@GMAIL.COM
للإستشارات الهندسية interiors Inc.	AHMEDMOSTAFA.NN1.ARCH@GMAIL.COM
MAH Design	ABDELRAHMAN.HASSAN20@GMAIL.COM
مكتب المهندس محمد خالد Eng Mohamed Khaled office	EWAAN.INTERIORS@GMAIL.COM
المجموعة الهندسية للعمارة والديكور Engineering group for Agricultrire and design	EGAD@EGAD_EG.COM
ديكور للإبداع Creation design	ELRAYESA395@GMAIL.COM, MOUTAZAHMED97@YAHOO.COM
المجموعة المتحدة للإستشارات الهندسية United Group for engineering Consultancies	M.F_SHETA@YAHOO.COM
مكتب المهندس أحمد درويش	TATOLADARWISH.AD@GMAIL.COM

Office of Eng. Ahmed Darwish new line company	GM@NEWHINESGROUP.COM CG.EG2012@GMAIL.COM
المجموعة الإستشارية للأعمال الهندسية Consulting Group fro engineering works	
Architectural civil engineer	AHMEDGAMAL9133@GMAIL.COM
الشوربجي El Shourbagy	SAIDELGENDYSHC@GMAIL.COM- SAID_ELGENDY2000@YAHOO.COM
شركة العطا في صبره El Atfy Sabrah company	TOTA.DARWISH1@GMAIL.COM
Home designs	HRMEDESIGNS@OUTLOOK.COM
Mena countty	RAWDAH_GABER@MENACOUNTRY.COM
دهب ديزاين Dahab Diazeen	MAHAZAATOUT2012@YAHOO.COM
Architectural civil engineer	AHMEDGAMAL9133@GMAIL.COM
مصنع عرنسة للأثاث Arisa factory for Furniture	SARAAMMAR443@GMAIL.COM
مدينة للهندسة والأنشاءات Engineering and Construction City	SHADYELSHAFIE91@GMAIL.COM
شركة البنيان للأعمال الهندسية Al Benian fro Engineering works	ZEKO.NAHDA.COMMENT@GMAIL.COM
عبد العزيز لعموم المقاولات والتوريدات Abdel Aziz Lamloum fro construction and supplies	GEDOS100@GMAIL.COM
High value company	BASEMMOHAMED198@GMAIL.COM
Leader`s Group	NADER.AZIZ.ADLY@GMAIL.COM
كروكي ديزاين Kroky design company	KROKYDESIGN87@GMAIL.COM
داري ديزاين Dary Design company	BASSANTBARAKAT@GMAIL.COM
جرافوتك Graftek company	YORO.GAWDAT@GMAIL.COM

#### 4. In the field of communication and Media

- In the field of Journalism:

- Institution of Al Ahram for training students in Journalism
- The national authority for journalism
- El Watan Journal
- Masrawy Journal
- El Mary El Youm Journal

-In the field of Radio and TV:

- Channel No. 1 of the National TV
- Rotana Channel
- BBC Channel
- CBC Channel- Extra News

5. In the field of Public Relations and marketing communication













- LOOK Agency for advertisements













### 17.5 International Partnerships

partnerships in all types of activities including research, joint projects, joint programs, students' activities and conferences. Also, there has been programmed exchange of visits for staff and students (mobilities) under several EU projects that contribute to all the above activities.

Table 26. International Partnerships (MOUs)

Medical Sector	International Institute	Contributing to SDG
Dentistry	The University of Naples Federico II, Italy 	SDG3
Pharmacy	Aston University, Birmingham, UK 	SDG3
	Kingston University, London, UK 	SDG3
	The University of Naples Federico II, Italy 	SDG3

	Royal Institute of Technology KTH – Sweden		SD3
Physical Therapy	Goethe' University , Frankfurt, Germany		SDG3
STEM	Royal Institute of Technology KTH – Sweden		SDG6, SDG7, SDG11, SDG12, SDG13
	Heilbronn University HHN - Germany		SDG6, SDG7, SDG11, SDG12, SDG13
	Tomas Bata University (TBU), Czech Republic		SDG6, SDG7, SDG11, SDG12, SDG13
	University of Alabama in Birmingham, USA		SDG6, SDG7, SDG11, SDG12, SDG13
	Hunan Agriculture University - China		SDG6, SDG7, SDG11, SDG12, SDG13
Humanities (business and entrepreneurship)	JAMK University of Applied Sciences, Finland		SDG8, SDG9
	Technological University Dublin (TU Dublin), Ireland		SDG8
	Heilbronn University HHN - Germany		SDG8
	Tomas Bata University (TBU), Czech Republic		SDG8
Humanities (Law)	Sciences Po Lille - France		SDG16

Humanities (Art and design)	Kingston University, London, UK		SDG11
Humanities (Optometry)	Aston University, Birmingham, UK		SDG3
Humanities (Tourism)	JAMK University of Applied Sciences, Finland		SFG9, SDG11
	Lincoln University College, Malaysia		SDG9, SDG11
	University of Missouri–Kansas City (UMKC), USA		SDG9.SDG11
Humanities (Mass communication)	East Carolina University, USA		SDG17
Humanities (Languages)	The British Council		
	Norwich Institute for Language Education, UK		
	Universidad De Castilla- La Mancha-Spain		SDG5, SDG17
	Cambridge- ESOL (English Language Centre (ELC))		SDG5, SDG17
	Beijing Languages and Culture University (BLCU), China		SDG5, SDG17
	Guangdong University of Foreign studies Guangdong University of Foreign studies,		SDG5, SDG17

	China	
	AMIDEAST	 SDG5, SDG17
	University of Leicester	 <b>University of Leicester</b> SDG5, SDG17

MOUs in Other disciplines

Agence Universitaire Francophonique	
Salamanca University, Spain	
Institute Of International Education (Lotus Program)	
USAID projects	
Aristotle University of Thessaloniki, Greece	
University of Eastern Finland UEF	
University Senghor, Alexandria	

Collaboration of Pharos University with Ministries, Governmental Agencies, Industrial Companies and Embassies

Institute of Cultural Affairs
Spanish embassy/ consulate



American embassy/ consulate
French embassy/ consulate
British embassy/ consulate
Chinese embassy/ consulate

## 17.6. International Mobilities in SDGs

### International Mobilities in SDG 3 Good Health and Wellbeing

Name	Title	Faculty- PUA	Host university	Travel Dates
Samar ossama El-ganainy	Lecturer	Faculty of Pharmacy Pharmacology &Therapeutics Department	University of Eastern Finland (Finland).	24 April 2019 to 3 May 2019
Mennatallah Ahmed Ismail Ali	Lecturer	Faculty of Pharmacy Pharmacology &Therapeutics Department	University of Eastern Finland (Finland).	24 April 2019 to 3 May 2019
Mohamed Gamal Bekhit	PhD student	Faculty of Pharmacy Pharmaceutical Chemistry Department	University of Eastern Finland (Finland).	1 March2019 To 31 May2019

### International Mobilities in SDG 8 : Decent Places and Economic Growth

Name	Title	Faculty- PUA	Host university	Travel Dates
Mayssa Mahmoud Abdelsalam Abdallah Elmofty	Assistant Lecturer	Financial and Administrative Sciences	(TU DUBLIN)- Ireland	22 September 2019 to 6 October 2019
Riham Hassan Mahmoud Younis	Assistant Lecturer	Financial and Administrative Sciences	(TU DUBLIN)- Ireland	22 September 2019 to 6 October 2019
Irene Robert Dicran Balian	Teacher assistant	Faculty of Financial and Administrative Sciences	(TU DUBLIN) Ireland	1 February 2020 to 12 February 2020
Omneya Mohamed Moharam Aly	Teacher assistant	Faculty of Financial and Administrative Sciences	(TU DUBLIN) Ireland	1 February 2020 to 12 February 2020
Name	Title	Faculty- PUA	Host university	Travel Dates
Sara Hussein Fahmy Mohamed Ahmed	Lecturer	Career Development and Entrepreneurship center	JAMK University Finland	1 June 2019 To 13 June 2019

### International Mobilities in SDG 9: Industry, Innovation and Infrastructure

Name	Title	Faculty- PUA	Host university	Travel Dates
Moataz Ehab	Demonstrator	Faculty of Engineering Department of Construction	KTH - Sweden	15 January 2019 15 February 2019
Rita Garbis	Assistant Lecturer	Faculty of Engineering Mechanical Engineering Department	KTH - Sweden	30 March 2019 to 10 April 2019
Engy Elnayal	Lecturer	Faculty of Engineering Electrical Department	KTH - Sweden	20 March 2019 To 18 April 2019
Mohamed abdelkarim	Lecturer	Faculty of Engineering Electrical Department	KTH - Sweden	12 March 2019 To 23 March 2019
Moustafa Mohamed Mohamed Elsayed	Lecturer	Faculty of Engineering Basic Sciences Department	University of Oradea Romania	15 December 2019 to 21 December 2019.

### International Mobilities in SDG 11: Sustainable cities

Through MOUs , the Faculty of Arts and design nominated the Teaching assistant as indicated in the table below to travel to Aristotle university for training in the filed of arts and design. The candidate spent most of the time in the host university to see how the curricula in Pharos university can de developed to match the international standards and sustainable development. On his return, he was able to make changes to some topics in the undergraduate curricula to infuse sustainability to the program. Staff members – Erasmus+ (2019-2020).

Name	Title	Faculty- PUA		Host university	Travel Dates
Mohamed Osama	Teaching Assistant	Faculty of Arts and design  Department of Décor		Aristotle University Greece	15 April 2019 to 19 April 2019

### International Mobilities in SDG 14: Life below water

Through MOUs, The faculty of Tourism nominated its candidate to travel to JAML University for training and exploring cultural heritage in indigenous coastal areas and ways and means of using the life under water for tourist attraction particularly in the areas of south Sinai and the Red sea coast.

Name	Title	Faculty- PUA	Host university	Travel Dates
Tamer Mohamed AbdelRaouf Hassan	Lecturer	Faculty of Tourism and Hotel Management	JAMK University Finland	1 June 2019 To 13 June 2019

### International Mobilities in SDG 16:

Through MOUS, the faculty of legal studies and international relations nominated an associate professor to travel to Aristotle university to spread the notion of water politics and water rights in the national and international law. The candidate delivered few lectures to students and staff of Aristotle university and explored means and ways of communication in the field of human rights.

Name	Title	Faculty- PUA	Host university	Travel Dates
Walid Fahmy	Associate Professor	Faculty of Legal Studies & International Relations Department of Public International Law	Aristotle University Greece	26 May 2019 to 1 June 2019

## 17.7. Students' Research Projects Relevant to SDGs

### Students Projects Relevant to SDG 7:

Project name	Summary
29. Natural Fibers	The usage of natural resources will play a leading role in the sustainable development of the cement and concrete industry during this century. Plant-based natural fibers are used more increasingly in construction materials. Despite the low-cost of such environmentally friendly renewable material, it has the ability to enhance the mechanical properties of construction materials. This project presents extensive experiments on the use of plant based natural fibers as reinforcement for cement-based composites, with a particular emphasis upon fiber types; fiber characteristic, and fiber-cement composites performance
30. Solar PV pumps for sustainable irrigation in Egypt	This project represents a comprehensive design of photovoltaic water pumping system powered entirely by solar energy with object of conserving electricity by reducing the usage of grid power and conserving water by reducing water losses. Proposed system is easy to implement and environment friendly solution for irrigation fields as well as requires minimal maintenance and attention and is self-starting.
31. Design and optimization of solar collectors' network for swimming pool	This project presents a general procedure for designing and optimizing the arrangement of solar collectors of swimming pool heating applications using TRNSYS software. The optimal arrangement of the solar collectors for thermal applications requires a merge between thermal and hydraulic objectives. For the

heating application	thermal side, the working fluid must provide the heat load for the swimming pool at the specified temperature also for the hydraulic side the fluid must flow through the system facing a pressure drop within the specified limits. In this project, the overall arrangement of solar collectors which forms the total collector surface area is named by the (solar collector's network). This network will be practically applied on a swimming pool as a case study for this project. In addition to, an experimental model of a solar heater is constructed to fit the swimming pool.
32. Design, Modeling and performance analysis of solar still	Two identical conventional solar still have been fabricated and will be assembled. For enhancing the freshwater yield, we used some parameters on solar still like a black aluminum sheets fins fixed on a black Basin (steel, 80*50*10 cm, thickness 6 mm). The transparent glass covers of 5mm thickness were placed at an inclination of 30° to the horizontal. Moreover, we used absorbing material like a black dye and sensible heat storage material on different water depth (20mm, 30mm and 40mm). Also, modeling has been carried out aided by some basic and simplified hypotheses, according to overall thermal energy balances on glass, water mass and basin. while taking into consideration an atmospheric condition such as temperatures, humidity, and solar intensity as well as wind speed.
33. Design and optimization of solar collectors' network for swimming pool heating application	This project presents a general procedure for designing and optimizing the arrangement of solar collectors of swimming pool heating applications using TRNSYS software. The optimal arrangement of the solar collectors for thermal applications requires a merge between thermal and hydraulic objectives. For the thermal side, the working fluid must provide the heat load for the swimming pool at the specified temperature also for the hydraulic side the fluid must flow through the system facing a pressure drop within the specified limits. In this project, the overall arrangement of solar collectors which forms the total collector surface area is named by the (solar collector's network). This network will be practically applied on a swimming pool as a case study for this project. In addition to, an experimental model of a solar heater is constructed to fit the swimming pool.
34. Design, Modeling and performance analysis of solar still	Two identical conventional solar still have been fabricated and will be assembled. For enhancing the freshwater yield, we used some parameters on solar still like a black aluminum sheets fins fixed on a black Basin (steel, 80*50*10 cm, thickness 6 mm). The transparent glass covers of 5mm thickness were placed at an inclination of 30° to the horizontal. Moreover, we used absorbing material like a black dye and sensible heat storage material on different water depth (20mm, 30mm and 40mm). Also, modeling has been carried out aided by some basic and simplified hypotheses, according to overall thermal energy balances on glass, water mass and basin. while taking into consideration an atmospheric condition such as temperatures, humidity, and solar intensity as well as wind speed.
35. Design and optimization of solar collectors' network for swimming pool	This project presents a general procedure for designing and optimizing the arrangement of solar collectors of swimming pool heating applications using TRNSYS software. The optimal arrangement of the solar collectors for thermal applications requires a merge between thermal and hydraulic objectives. For the

heating application	thermal side, the working fluid must provide the heat load for the swimming pool at the specified temperature also for the hydraulic side the fluid must flow through the system facing a pressure drop within the specified limits. In this project, the overall arrangement of solar collectors which forms the total collector surface area is named by the (solar collector's network). This network will be practically applied on a swimming pool as a case study for this project. In addition to, an experimental model of a solar heater is constructed to fit the swimming pool.
36. Smart campus	This project is still proceeding in the academic year 2020/2021 and it aims to construct a smart system for the life of students and staff members in university campus. It helps the education process and provides facilities to check attendance. It also allows students to enter the campus and study rooms with a smart card that can also be used for fees payment.

### Students Projects Relevant to SDG 9

Project name	Summary
1. Natural Fibers	The usage of natural resources will play a leading role in the sustainable development of the cement and concrete industry during this century. Plant-based natural fibres are used more increasingly in construction materials. Despite the low-cost of such environmentally friendly renewable material, it has the ability to enhance the mechanical properties of construction materials. This project presents extensive experiments on the use of plant based natural fibres as reinforcement for cement-based composites, with a particular emphasis upon fibre types; fibre characteristic, and fibre-cement composites performance
2. Smart campus	This project is still proceeding in the academic year 2020/2021 and it aims to construct a smart system for the life of students and staff members in university campus. It helps the education process and provides facilities to check attendance. It also allows students to enter the campus and study rooms with a smart card that can also be used for fees payment.
3. Smart traffic light	(SDG 11) Make cities and human settlements inclusive, safe, resilient and sustainable
4. Smart campus	This project is still proceeding in the academic year 2020/2021 and it aims to construct a smart system for the life of students and staff members in university campus. It helps the education process and provides facilities to check attendance. It also allows students to enter the campus and study rooms with a smart card that can also be used for fees payment.
5. Design a solar hybrid air conditioning compressor system	Statistics these days say that electricity demand increase in air conditioning system, due to increasing in temperature in the most of countries, so people suffer from high electricity bills. Integrate solar devices or systems to use heat gain from sun to get electricity, and devices that we can use {photovoltaic, solar collector, hybrid system}.The electricity produced can be used to operate compressor that used for compressing the refrigerant in air conditioning system .Three system mentioned above, we should select the best system that give low electricity demand and high efficiency .

6. Solar trackers for hybrid power supply	This project represents a smart power supply by using solar energy as the sources. It reduces the Use of other sources in order to achieve our goal to generate electricity (during day time). The solar tracker device equipped with the project which is absorbs the ultraviolet (UV) from the sun in maximum condition. The tracker operates with single axis rotation where it can be rotating horizontal. This circuit is activated when light dependent resistor (LDR) detecting the sunshine where four sensors are placed at north and south position.
7. Public Transportation System	This project was done in the academic year 2019/2020 and its main goal was to design a smart system for public transport. The system uses GPS and GSM system to determine the exact location of vehicle and collect data to provide people with the best choice of public transport to use. The system saves time and money and helps in the concept of building smart cities and includes several industrial innovations. (SDG 11) Make cities and human settlements inclusive, safe, resilient and sustainable (SDG 9) Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
8. Brain Controlled Smart Wheelchair Based on Mental Task Classification	This project was done in the academic year 2019/2020. The main objective of the project is to help people that were born with the inability to move or had experienced accidents, which led to their loss of this ability. Such situation negatively affected their lives and made them in a permanent need for those who take care of them. The project used technologies to allow these people to control wheel chair via their brain function. (SDG 9) Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. (SDG 3) Ensure healthy lives and promote well-being for all at all ages
9. Smart campus	This project is still proceeding in the academic year 2020/2021 and it aims to construct a smart system for the life of students and staff members in university campus. It helps the education process and provides facilities to check attendance. It also allows students to enter the campus and study rooms with a smart card that can also be used for fees payment.

**Projects of students Relevant to SDG 10:**

Project name	Summary
1. Brain Controlled Smart Wheelchair Based on Mental Task Classification	This project was done in the academic year 2019/2020. The main objective of the project is to help people that were born with the inability to move or had experienced accidents, which led to their loss of this ability. Such situation negatively affected their lives and made them in a permanent need for those who take care of them. The project used technologies to allow these people to control wheel chair via their brain function. (SDG 9) Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. (SDG 3) Ensure healthy lives and promote well-being for all at all ages

**Projects of students Relevant to SDG 11:**

Project name	Summary
1. Water and wastewater	<p>Wastewater treatment is a process, which is being done on the wastewater to change its quality for drinking or other suitable purposes. Wastewater treatment takes place in wastewater treatment plants, which should be designed under different circumstances. The project contains:</p> <ul style="list-style-type: none"> <li>6- Design intake sum pump unit.</li> <li>7- Design sedimentation tank.</li> <li>8- Design filtration tank.</li> <li>9- Design sludge treatment process.</li> <li>10- Take a case study in a new compound city.</li> </ul>
2. Electrical design of residential compound area with management of distributed generation and optimum power quality performance by load demand side	<p>The aim of this power system project is to help the student in his final B.E. graduation project to apply what he has learned in the field of power systems under graduate courses. The materials included in the following requirements of the design project shall be calculated and prepared in the same structure of the typical professional jobs of electrical engineering works according to the roles of IEC standard codes.</p>
3. IoT approach for sustainable green campus	<p>This project proposes a complete layout for a smart green campus using IoT as a core technology. This project highlights several main features of green campus such as energy saving and efficiency water consumption. The communication technologies that will be implemented in the project layout will be RFID, Bluetooth and cloud computing. Moreover, some prototypes will be designed to validate the proposed layout</p>
4. Design a solar hybrid air conditioning compressor system	<p>Statistics these days say that electricity demand increase in air conditioning system, due to increasing in temperature in the most of countries, so people suffer from high electricity bills. Integrate solar devices or systems to use heat gain from sun to get electricity, and devices that we can use <b>{photovoltaic, solar collector, hybrid system}</b>.The electricity produced can be used to operate compressor that used for compressing the refrigerant in air conditioning system .Three system mentioned above, we should select the best system that give low electricity demand and high efficiency .</p>
5. Solar trackers for hybrid power supply	<p>This project represents a smart power supply by using solar energy as the sources. It reduces the Use of other sources in order to achieve our goal to generate electricity (during day time). The solar tracker device equipped with the project which is absorbs the ultraviolet (UV) from the sun in maximum condition. The tracker operates with single axis rotation where it can be rotating horizontal. This circuit is activated when light dependent resistor (LDR) detecting the sunshine where four sensors are placed at north and south position.</p>

6. Smart traffic light	(SDG 11) Make cities and human settlements inclusive, safe, resilient and sustainable
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#### Projects of students Relevant to SDG 12:

Project name	Summary
1. Recycling of fabric scrap	The importance of recycling textiles is increasingly being recognized. The purpose. Once in landfills, natural fibers can take hundreds of years to decompose. They may release methane and CO2 gas into the atmosphere. Additionally, synthetic textiles are designed not to decompose. In the landfill, they may release toxic substances into groundwater and surrounding soil. The synthetic fiber raw materials totally imported from outside as polyester and nylon and the annual consumption is 440 thousand tons and the recycling processes are not applicable, so the new technology for recycling this scrap is value added materials

#### Projects of students Relevant to SDG 13:

Project name	Summary
1. Recycling of fabric scrap	The importance of recycling textiles is increasingly being recognized. The purpose. Once in landfills, natural fibers can take hundreds of years to decompose. They may release methane and CO2 gas into the atmosphere. Additionally, synthetic textiles are designed not to decompose. In the landfill, they may release toxic substances into groundwater and surrounding soil. The synthetic fiber raw materials totally imported from outside as polyester and nylon and the annual consumption is 440 thousand tons and the recycling processes are not applicable, so the new technology for recycling this scrap is value added materials

### 17.8. Collaborations and Research Publications contributing to SDGs

Pharos University contributed to by research relevant to several SDGs. In total, in 2019, and according to SCOPUS data there are 93 indexed publications as shown in the table below. The following is a summary of these publications:

SDG OF CONCERN	NO. OF PUBLICATIONS
SDG 3. GOOD HEALTH AND WELLBEING	63
SDG 6. CLEAN WATER AND SANITATION	3
SDG7. AFFORDABLE ENERGY	4
SDG9. INDUSTRY INNOVATION AND INFRASTRUCTURE	20
SDG11. SUSTAINABLE CITIES	2
SDG12. RESPONSIBLE CONSUMPTION PRODUCTION	1

The co-authorship in the publications are due to collaborations with national, Regional and international universities and research institutions. The Table below shows these these institutions and the number of Publications



Level of collaboration	Name of Institution	Relevant SDG	No. of publication
Local	Alexandria University	SDG3	41
		SDG6	1
		SDG9	8
		SDG11	1
		SDG15	1
	Cairo University	SDG3	4
	Ain shams University	SDG3	2
	Tanta University	SDG3	1
	Menofia University	SDG9	2
	Minia University	SDG9	1
	Damahur university	SDG3	1
	Azhar University	SDG9	1
	Aswan University	SDG3	1
	Arab Academy	SDG3	1
		SDG9	1
	Egyptian Japanese University	SDG3	9
		SDG7	1
	Higher Institute of Technology	SDG9	1
	Higher institute of fishery	SDG3	1
	Agriculture research center	SDG15	1
	Future University	SDG3	1
	Zewail City	SDG9	1
	City of Science and Technology	SDG3	2
		SDG9	1
	6 October University	SDG3	1
	Nile university	SDG3	1
<b>Subtotal</b>	<b>19 National University and research centers</b>		
Regional	American University of Beirut – Lebanon	SDG3	3
		SD6	1
		SDG9	2
		SDG15	1
	Banghazi University- Libya	SDG3	
	Prince Sattam Bin Abdul Aziz , KSA	SDG3	1
	King Abdul Aziz university – KSA	SDG3	1
	King Fahd University of Petroleum	SDG7	1
	Amman University- Jordan	SDG3	1
	Kuwait University	SDG3	
	Sanaa University – Yemen	SDG9	1
	United Arab Emirates university	SDG9	1
		SDG3	1
Turkey University	SDG9	1	
<b>Subtotal</b>	<b>10 Regional Universities</b>		
International	Fraunhofer institute for molecular biology-	SDG3	1

	Germany		
	Munchen insituto de investigacion - Germany	SDG3	1
	University of Leipzig - Germany	SDG3	1
	University of Adelaide- Australia	SDG3	1
	Queensland university- Monach - Autralia	SDG3	1
	University of Innsbruck- Austria	SDG9	1
	Universidad de Navarra - Spain	SDG3	1
	University of Eastern Finland- Finland	SDG3	1
	University of Genoa- Italy	SDG3	1
	Queen Elizabeth Hospital , Dept. of clinical Oncology- Know;oon , Honlong- China	SDG3	1
	Hokkaido University- Japan	SDG3	1
	Elizabeth University- Malaysia	SDG3	1
	University of Teknologi Petonas- Malayia	SDG3	1
	University Putra - Malaysia	SDG9	1
	Old Dominion university- USA	SDG9	1
	University of Illinois - Chicago	SDG3	1
	South Dakota State university- USA	SDG3	1
	Calgary University - Canada	SDG3	1
Subtotal	18 International University		
Total	47 university and research institution		

## Publications in SDG 3

1	A Novel Morphological Analysis of DXA-DICOM Images by Artificial Neural Networks for Estimating Bone Mineral Density in Health and Disease
	Mohamed, E.I., Meshref, R.A., Abdel-Mageed, S.M., Moustafa, M.H., Badawi, M.I., Darwish, S.H.
	Collaboration with Alexandria University
2	Co-targeting of endothelin-A and vitamin D receptors: a novel strategy to ameliorate cisplatin-induced nephrotoxicity
	Abdel Moneim, L.M., Helmy, M.W., El-Abhar, H.S
	Collaboration with Cairo University
3	Effect of using zirconia and metallic bar attachment overdentures on the supporting structures of mandibular edentulous ridge area (Randomized control trial) (2019) Indian Journal of Public Health Research and Development, 10 (9), pp. 1150-1155. 20)
	Debis, M.Z., Badr, A.I., Agamy, E.M., Mohamed, G.F.
	Collaboration with Minia University
4	Opportunistic parasitoses among Egyptian hemodialysis patients in relation to CD4+ T-cell counts: A comparative study
	Shehata, A.I., Hassanein, F., Abdul-Ghani, R.
	Collaboration with Alexandria University, and Sanaa University
5	Role of TGF- $\beta$ 1 and C-Kit Mutations in the Development of Hepatocellular Carcinoma in Hepatitis C Virus-Infected Patients: in vitro Study
	El-Houseini, M.E., Ismail, A., Abdelaal, A.A., El-Habashy, A.H., Abdallah, Z.F., Mohamed, M.Z., El-Hadidi, M., Cho, W.C.S., Ahmed, H., Al-Shafie, T.A.
	Collaboration with Kowlool hong kong China, Queen Elizabeth Hospital, GlycoMantra ,Cairo University, Ain Shams University
6	Synthesis and biological evaluation of purine-pyrazole hybrids incorporating thiazole, thiazolidinone or rhodanine moiety as 15-LOX inhibitors endowed with anticancer and antioxidant potential
	Afifi, O.S., Shaaban, O.G., Abd El Razik, H.A., Shams El-Dine, S.E.-D.A., Ashour, F.A., El-Tombary,
	Collaboration with City of Scientific Research and Technological Applications, and Alexandria University
7	Synthesis and molecular docking study of some 3,4-dihydrothieno[2,3-d]pyrimidine derivatives as potential antimicrobial agents
	Shaaban, O.G., Issa, D.A.E., El-Tombary, A.A., Abd El Wahab, S.M., Abdel Wahab, A.E., Abdelwahab, I.A.
8	Professional boundaries.
	Elnaem, M.H., Hamdy, N.A.
	Collaboration with INTERNATIONAL ISLAMIC Institute of Malaysia

9	Shooting three inflammatory targets with a single bullet: Novel multi-targeting anti-inflammatory glitazones (2019) European Journal of Medicinal Chemistry, 167, pp. 562-582. Cited 5 times.
	Elzahhar, P.A., Alaaeddine, R., Ibrahim, T.M., Nassra, R., Ismail, A., Chua, B.S.K., Frkic, R.L., Bruning, J.B., Wallner, N., Knape, T., von Knethen, A., Labib, H., El-Yazbi, A.F, Belal, A.S.F.
	Collaboration with Alexandria university, American University of Beirut, Beirut, Lebanon, The University of Adelaide, Adelaide, South Australia, Fraunhofer Institute for Molecular Biology and , Faculty of Medicine, Goethe-University Applied Ecology
10	A combined treatment of curcumin, piperine, and taurine alters the circulating levels of IL-10 and miR-21 in hepatocellular carcinoma patients: A pilot study
	Hatab, H.M., Abdel Hamid, F.F., Soliman, A.F., Al-Shafie, T.A., Ismail, Y.M., El-Houseini, M.E.
	Collaboration with Ain Shams university , Cairo university
11	A new design for a chronological release profile of etodolac from coated bilayer tablets: In-vitro and in-vivo assessment.
	Georgy, K.R., Farid, R.M., Latif, R., Bendas, E.R.
	Collaboration with Future university, Cairo university
12	A novel investigation of statins myotoxic mechanism: effect of atorvastatin on respiratory muscles in hypoxic environment
	El-Ganainy, S.O., El-Mallah, A., Abdallah, D., Khattab, M.M., El-Khatib, A.S., Mohy El-Din, M.M.
	Collaboration with Alexandria University, Cairo University
13	A novel voltammetry offline coupled MALDI/TOF MS characterization of electrochemical reaction products and the voltammetric determination of febuxostat in human plasma
	El-Yazbi, F.A., Amin, O.A., Bakry, R., Khamis, E.F., El-Kimary, E.I., Younis, S.E.
	Collaboration with University of Innsbruck, Alexandria University
14	An Initial Demonstration of Polyester Monomer Coordination Properties: Synthesis and Biological Activity of Metal Complexes Derived from a New Nanosized Diol
	Elhusseiny, A.F., Hussien, H.M., Hassan, H.H.A.M.
	Collaboration with Alexandria University
15	Anionic versus cationic bilosomes as oral nanocarriers for enhanced delivery of the hydrophilic drug
	Elnaggar, Y.S.R., Omran, S., Hazzah, H.A., Abdallah, O.Y
	Collaboration with Alexandria University
16	Assessment of Osteoimmunological Changes Following Orthognathic Surgery
	Soliman, S., Dehis, M., Ahmed, M., Kateeb, E.E.L.
	Pharos University

17	Astrocyte-Targeted Transporter-Utilizing Derivatives of Ferulic Acid Can Have Multifunctional Effects Ameliorating Inflammation and Oxidative Stress in the Brain
	Ahmed Montaser, <sup>1</sup> Johanna Huttunen, <sup>1</sup> Sherihan Abdelhamid Ibrahim, <sup>2</sup> and Kristiina M. Huttunen
	Collaboration with Eastern Finland
18	Clarithromycin resistance and genetic pattern of helicobacter pylori in a group of patients with peptic ulcer disease in alexandria, Egypt
	Alhammad, M.A., El-Kady, H., Hamed, Y.
	Collaboration with Universiti Teknologi PETRONAS, Alexandria university , Benghazi University
19	Clarithromycin resistance and genetic pattern of helicobacter pylori in a group of patients with peptic ulcer disease in alexandria, Egypt
	Alhammad, M.A., El-Kady, H., Hamed, Y.
	Collaboration with American University of Beirut, Alexandria university
20	Comparison of remineralization by fluoride varnishes with and without casein phosphopeptide amorphous calcium phosphate in primary teeth
	64) Salman, N.R., ElTekeya, M., Bakry, N., Omar, S.S., El Tantawi, M.
	Collaboration with Alexandria University
21	Comparison of the effects of short-duration wrist joint splinting combined with physical therapy and physical therapy alone on the management of patients with lateral epicondylitis.
	Kachanathu, S.J., Alenazi, A.M., Hafez, A.R., Algarni, A.D., Alsubiheen, A.M.
	Collaboration with Prince Sattam bin Abdulaziz University ,King Saud university
22	Controlled release Ibu-cryobarriers for the prevention of post-operative adhesions: In-vitro/in-vivo comparative study
	Ezzat, H.M., Elnaggar, Y.S.R., Abdallah, O.Y.
	Collaboration with Alexandria university
23	Correlation study of functional performance between diabetic and non-diabetic patients with knee osteoarthritis
	Hamed, A.M., Aboeleinen, M.H., Abdelgawad, H.A., Aboelazm, S.N
	Collaboration with Misr International University
24	Current strategies for different paclitaxel-loaded Nano-delivery Systems towards therapeutic applications for ovarian carcinoma: A review article
	Khalifa, A.M., Elsheikh, M.A., Khalifa, A.M., Elnaggar, Y.S.R
	Collaboration with Alexandria University
25	Dental management of a child with ectrodactyly ectodermal dysplasia cleft lip/palate syndrome: A

	case report
	Elhamouly, Y., Dowidar, K.M.L.
	Collaboration with Alexandria University
26	Design, synthesis and biological evaluation of novel $\alpha$ -acyloxy carboxamides via Passerini reaction as caspase 3/7 activators
	Salah Ayoup, M., Wahby, Y., Abdel-Hamid, H., Ramadan, E.S., Teleb, M., Abu-Serie, M.M., Noby, A.
	Collaboration with Alexandria University, City of Scientific Research and Technological Applications
27	Design, synthesis and pharmacological evaluation of some substituted dihydropyrimidines with L-/T-type calcium channel blocking activities
	Teleb, M., Rizk, O.H., Zhang, F.-X., Fronczek, F.R., Zamponi, G.W., Fahmy, H.
	Collaboration with Institute, University of Calgary, Alexandria University, South Dakota State University
28	Diosmin Nanocrystal-Loaded Wafers for Treatment of Diabetic Ulcer: In Vitro and In Vivo Evaluation
	Atia, N.M., Hazzah, H.A., Gaafar, P.M.E., Abdallah, O.Y.
	Collaboration with Alexandria University, Arab Academy for Science, Technology and Maritime Transport
29	Dual VEGFR-2/PIM-1 kinase inhibition towards surmounting the resistance to antiangiogenic agents via hybrid pyridine and thienopyridine-based scaffolds: Design, synthesis and biological evaluation (2019) Bioorganic Chemistry, 92, art. no. 103189, .
	Rizk, O.H., Teleb, M., Abu-Serie, M.M., Shaaban, O.G.
	Collaboration with Alexandria University
30	Eco-Friendly Tadalafil Surfactant-Free Dry Emulsion Tablets (SFDETs) Stabilized by In Situ Self-Assembled Aggregates of Natural Oil and Native Cyclodextrins
	Badr-Eldin, S.M., Labib, G.S., Aburahma, M.H.
	Collaboration with Alexandria University, King Abdulaziz University
31	Effect of local administration of simvastatin on orthodontic tooth movement in rabbits
	AlSwafeeri, H., ElKenany, W., Mowafy, M., Karam, S.
	Collaboration with Alexandria University
32	Effect of using distal extension bar on the posterior ridge area in implant supported mandibular overdentures
	Abdel Hamid, S.M., Hamzawi, A.G., Agamy, E.M., Mohamed, G.F
	Collaboration with Minia University
33	Effect of visceral decongestion of true pelvis on primary dysmenorrhea
	Atef, A.M., Awad, M.A., Emara, H.M., Kamel, H.E.D.H.

	Collaboration with Alexandria University
34	Emergence of bla <sub>VEB</sub> and bla <sub>GES</sub> among VIM-producing <i>Pseudomonas aeruginosa</i> clinical isolates in Alexandria, Egypt
	Gaballah, A., Elbaradei, A., Elsheredy, A., Kader, O.
	Collaboration with Alexandria University
35	Enhanced production of di-(2-ethylhexyl) phthalate (DEHP) by <i>Bacillus subtilis</i> AD35 using response surface methodology (RSM)
	Lotfy, W.A., Hassan, S.W.M., Abd El-Aal, A.A., Ghanem, K.M.
	Collaboration with Alexandria University, and National Institute of Oceanography and Fisheries
36	Evaluating the therapeutic potential of one-carbon donors in nonalcoholic fatty liver disease
	Bakir, M.B., Salama, M.A., Refaat, R., Ali, M.A., Khalifa, E.A., Kamel, M.A.
	Collaboration with Alexandria University
37	Formulation strategies for achieving high delivery efficiency of thymoquinone-containing <i>Nigella sativa</i> extract to the colon based on oral alginate microcapsules for treatment of inflammatory bowel disease
	Samak, Y.O., Santhanes, D., El-Massik, M.A., Coombes, A.G.A.
	Collaboration with Queensland university, Monash university, Queen Elizabeth university
38	Improved oral bioavailability of the anticancer drug catechin using chitosomes: Design, in-vitro appraisal and in-vivo studies
	Ezzat, H.M., Elnaggar, Y.S.R., Abdallah, O.Y.
	Collaboration with Alexandria university
39	Improving hepatic mitochondrial biogenesis as a postulated mechanism for the antidiabetic effect of <i>spirulina platensis</i> in comparison with metformin (2019) <i>Applied Physiology</i> ,
	Oriquat, G.A., Ali, M.A., Mahmoud, S.A., Eid, R.M.H.M., Hassan, R., Kamel, M.A.
	Collaboration with Amman university, Alexandria university , Aswan university
40	Insights on the use of nanocarriers for acne alleviation (2019) <i>Current Drug Delivery</i> , 16 (1), pp. 18-25. Cited 11 times.
	Amer, S.S., Nasr, M., Mamdouh, W., Sammour, O.
	Collaboration with Alexandria University
41	Lecithin Microemulsion Lipogels Versus Conventional Gels for Skin Targeting of Terconazole: In Vitro, Ex Vivo, and In Vivo Investigation

	Talaat, S.M., Elnaggar, Y.S.R., Abdalla, O.Y.
	Collaboration with Alexandria University
42	Liquid Chromatography-Mass Spectrometry for muconic, mandelic, hippuric and methylhippuric acids analysis in human urine as metabolites for fuel exposure
	Belal, S.F., Shaalan, R.A., Ragab, M.A.A., El-Attar, E.A., Agami, M.
	Collaboration with Alexandria University
43	Maxillary sinus floor elevation using hydroxyapatite nano particles vs tenting technique with simultaneous implant placement: A randomized clinical trial
	Khaled, H., Atef, M., Hakam, M.
	Collaboration with Cairo University
44	Mechanistic role of cAMP and hepatocyte growth factor signaling in thioacetamide-induced nephrotoxicity: Unraveling the role of platelet rich plasma
	Keshk, W.A., Zahran, S.M.
	Collaboration with Tanta University
45	Mesoporous silica nanoparticles, a safe option for silymarin delivery: preparation, characterization, and in vivo evaluation
	Nasr, S.S., Nasra, M.M.A., Hazzah, H.A., Abdallah, O.Y.
	Collaboration with Alexandria University
46	Micro- and nanotechnology approaches to improve Parkinson's disease therapy
	Torres-Ortega, P.V., Saludas, L., Hanafy, A.S., Garbayo, E., Blanco-Prieto, M.J.
	Collaboration with Universidad de Navarra, Instituto de Investigación Sanitaria de Navarra
47	Reviewing two decades of nanomedicine implementations in targeted treatment and diagnosis of pancreatic cancer: An emphasis on state of art
	El-Zahaby, S.A., Elnaggar, Y.S.R., Abdallah, O.Y.
	Collaboration with Alexandria University
50	Robust Chromatographic Methods for the Analysis of Two Quaternary Mixtures Containing Paracetamol, Codeine, Guaifenesin and Pseudoephedrine or Phenylephrine in their Dosage Forms (2019) Journal of Chromatographic Science, 57 (9), pp. 828-837.
	El-Kimary, E.I., Khamis, E.F., Belal, S.F., Abdel Moneim, M.M
	Collaboration with Alexandria University
51	Simple mix-and-read assays for the determination of baclofen in pharmaceutical formulation
	El-Yazbi, A.F., Guirguis, K.M., Bedair, M.M., Belal, T.S.
	Collaboration with Alexandria University
52	Simultaneous determination of methocarbamol and aspirin in presence of their pharmacopeial-



	related substances in combined tablets using novel HPLC-DAD method
	El-Yazbi, F.A., Amin, O.A., El-Kimary, E.I., Khamis, E.F., Younis, S.E.
	Collaboration with Alexandria University
53	Structurally Diverse Histone Deacetylase Photoreactive Probes: Design, Synthesis, and Photolabeling Studies in Live Cells and Tissue
54	Aboukhatwa, S.M., Hanigan, T.W., Taha, T.Y., Neerasa, J., Ranjan, R., El-Bastawissy, E.E., Elkersh, M.A., El-Moselhy, T.F., Frasar, J., Mahmud, N., McLachlan, A., Petukhov, P.A.
	Collaboration with University of Illinois at Chicago , Tanta University, Alexandria University
55	Successful treatment of acute experimental toxoplasmosis by spiramycin-loaded chitosan
	Hagras, N.A.-E., Allam, A.F., Farag, H.F., Osman, M.M., Shalaby, T.I., Fawzy Hussein Mogahed, N.M., Tolba, M.M., Shehab, A.Y
	Collaboration with Alexandria University
56	Synthesis of hexagonal nanozinc by arc discharge for antibacterial water treatment, (2019) Surface Innovations, 8 (3), pp. 165-171. Cited 1 time, DOI: 10.1680/jsuin.19.00050
	Khalil, A.M., El-Khatib, A.M., El-Khatib, M.
	Collaboration with Alexandria University
57	Synthesis of some new C2 substituted dihydropyrimidines and their electrophysiological evaluation as L-/T-type calcium channel blockers
	Teleb, M., Rizk, O.H., Zhang, F.-X., Fronczek, F.R., Zamponi, G.W., Fahmy, H.
	Collaboration with South Dakota State University, University of Calgary, University of Calgary, Alexandria University
58	Synthesis, antibacterial evaluation, and DNA gyrase inhibition profile of some new quinoline hybrids
	Rizk, O.H., Bekhit, M.G., Hazzaa, A.A.B., El-Khawass, E.-S.M., Abdelwahab, I.A.
	Collaboration with Alexandria University
59	Telmisartan and captopril ameliorate pregabalin-induced heart failure in rats (2019) Toxicology, 428, art. no. 152310, . Cited 1 time.
	Awwad, Z.M., El-Ganainy, S.O., ElMallah, A.I., Khattab, M.M., El-Khatib, A.S
	Collaboration with Alexandria University and Cairo University
60	The possible antidiabetic effects of vitamin D receptors agonist in rat model of type 2 diabetes
	Abdel-Rehim, W.M., El-Tahan, R.A., El-Tarawy, M.A., Shehata, R.R., Kamel, M.A.
	Collaboration with Alexandria University
61	The role of $\alpha 7nAChR$ in controlling the anti-inflammatory/anti-arthritis action of galantamine
	Gowayed, M.A., Rothe, K., Rossol, M., Attia, A.S., Wagner, U., Baerwald, C., El-Abhar, H.S., Refaat, R.

	Collaboration with University of Leipzig, Germany, Cairo University
62	Torres-Ortega, P.V., Martínez-Valbuena, I., Martí-Andrés, G., Hanafy, A.S., Luquin, M.R., 90) Torres-Ortega, P.V., Martínez-Valbuena, I., Martí-Andrés, G., Hanafy, A.S., Luquin, M.R., Collaboration with Universidad de Navarra, universität München, Instituto de Investigación Sanitaria de Navarra, Universidad de Navarra
63	Volatile organic compounds of biofluids for detecting lung cancer by an electronic nose based on artificial neural network Mohamed, E.I., Mohamed, M.A., Abdel-Mageed, S.M., Abdel-Mohdy, T.S., Badawi, M.I., Darwish, S.H. Alexandria university, October 6 university

### Publications in SDG 6:

1	Removal of Zinc from Aqueous Solution Using Activated Oil Shale Ehssan Nassef, Yehia Eltaweel Alexandria university
2	Synthesized silver carbon nanotubes and zinc oxide nanoparticles and their ability to remove methylene blue dye (2019) Journal of Nano Research, 56, pp. 1-16. Cited 3 times. El-Khatib, A.M., Yousef, N.S., Ghatass, Z.F., Badawi, M.S., Mohamed, M.M., Elkhatib, M. Beirut university, Alexandria university
3	Removal of Zinc from Aqueous Solution Using Activated Oil Shale Ehssan Nassef, Yehia Eltaweel Alexandria university

### Publications in SDG 7:

1	A New Self-Synchronized Strategy for Grid-Connected Three Phase Voltage Source Inverters Aboushal, M.A., Moustafa, M.M.Z., El-Gammal, M.A Alexandria University
2	Hybrid energy-efficient protocol in delay tolerant networks for IoT systems Elsaadany, A., Aboulhassan, M. Pharos University in Alexandria

3	Performance Analysis and Power Optimization for Spectrum-Sharing Mixed RF/FSO Relay Networks with Energy Harvesting
	El-Malek, A.H.A., Aboulhassan, M.A., Salhab, A.M., Zummo, S.A.
	Japan University of Science and Technology, King Fahd University of Petroleum & Minerals, Dhahran
4	The ability of forecasting flapping frequency of flexible filament by artificial neural network
	Fayed, M., Elhadary, M., Ait Abderrahmane, H., Zakher, B.N.
	American University of the Middle East, Khalifa University of Science and Technology,

### Publications in SDG 9:

1	Heat transfer enhancement in a radial turbulent sink flow cooling system
	Sorour, M.M., Fayed, M., El-Din, N.A.
	Alexandria University
2	A Coherent Performance for Noncoherent Wireless Systems Using AdaBoost Technique
	Gamal, H., Ismail, N.E., Rizk, M.R.M., Khedr, M.E., Aly, M.H.
	Arab Academy for Science Technology, Alexnadria university
3	A novel nanocomposite of Liquidambar styraciflua fruit biochar-crosslinked-nanosilica for uranyl removal from water
	Mahmoud, M.E., Khalifa, M.A., El Wakeel, Y.M., Header, M.S., El-Sharkawy, R.M., Kumar, S.,
	Old Dominion University, Alexandria University
4	A System Dynamics Model of Apparel Supply Chain Under Mass Customization
	Issa, M., Elgholmy, S., Sheta, A., Fors, M.N.
	Alexandria university
5	ArMTFr: a new permutation-based image encryption scheme
	Elkamchouchi, H., Salama, W.M., Abouelseoud, Y.
	Alexandria University
6	Biodegradation of Petroleum Oil Effluents and Production of Biosurfactants: Effect of Initial Oil Concentration
	Mostafa, N.A., Tayeb, A.M., Mohamed, O.A., Farouq, R.
	Minia university
7	Design and testing of high-density polyethylene nanocomposites filled with lead oxide micro- and nano-particles: Mechanical, thermal, and morphological properties

	Mahmoud, M.E., El-Khatib, A.M., El-Sharkawy, R.M., Rashad, A.R., Badawi, M.S., Gepreel, M.A. Beirut Arab University, Egypt-Japan University of Science and Technology
8	Does engineering of nanoshapes have antibacterial synergy with magnetic signal exposure? El-Kaliuoby, M.I., El-Khatib, A.M., Khalil, A.M. Alexandria University
9	Effect of square pulsed magnetic field exposure on growth kinetics of <i>Dickeya solani</i> Balabel, N.M., El-Kaliuoby, M.I., Khalil, A.M. Alexandria University, Agriculture Research Center
10	Fabrication and characterization of phosphotungstic acid - Copper oxide nanoparticles - Plastic waste nanocomposites for enhanced radiation-shielding Mahmoud, M.E., M.El-Sharkawy, R., Allam, E.A., Elsaman, R., El-Taher, A Al-Azhar University, Alexandria University
11	Graphene Magneto-Electric Antenna on Curved Structures for Millimeter Wave Communications Ghazi, A.M., Hamada, H., Malhat, H.A., Zainud-Deen, S.H Higher Technological Institute, Menoufia University, Badr University
12	High gain graphene-based magneto-electric antenna for 5G communications Zainud-Deen, S.H., Malhat, H.A., Ghazi, A.M. Badr University in Cairo, Menoufia University
13	Humans and bots web session identification using k-means clustering Medhat, M., Hassan, Y.F., Elsayed, A. Alexandria university
14	Kinetic study of the esterification of unsaturated free fatty acids Hawash, S.A., Ebrahiem, E.E., Farag, H.A. Alexandria University, Minia University
15	Lupine extract: A promising eco-friendly corrosion inhibitor Zarraa, R.M., Mahgoub, F.M., Hefnawy, A. Alexandria university
16	On the Location of a Constrained k- Tree Facility in a Tree Network with Unreliable Edges Aboutahoun, A.W., Fares, E. Zewail City of Science and Technology
17	Study of some gamma ray attenuation parameters for new shielding materials composed of NANO ZnO blended with high density polyethylene

	Alsayed, Z., Badawi, M.S., Awad, R., Thabet, A.A., El-Khatib, A.M.
	Beirut Arab University & Alexandria Univeisty
18	Surface Defects Classification of Hot-Rolled Steel Strips Using Multi-directional Shearlet Features
	Ashour, M.W., Khalid, F., Abdul Halin, A., Abdullah, L.N., Darwish, S.H.
	University Putra Malaysia
19	The Effect of Vortex Generators on Aerodynamics for Sedan Cars
	Bassem Nashaat Zakher, Mostafa El-Hadary, Andrew Nabil Aziz
	City of Scientific Research and Technological Application , Alexandria university
20	The Modified Fractional Power Series Method for Solving Fractional Non-isothermal Reaction–Diffusion Model Equations in a Spherical Catalyst
	Syam, M.I., Anwar, M.-N.Y., Yildirim, A., Syam, M.M.
	UAE University , Ege University Turkey

### Publications in SDG 11:

1	Framework for Interaction between Databases and Microservice Architecture
	Kholy, M.E., Fatatry, A.E.
	Alexandria University
2	IMPACT OF BUILDING REGULATIONS ON THE URBAN FABRIC OF THE CITY: CASE STUDY OF ALEXANDRIA, EGYPT
	NADIA SAMIR, RAMADAN ABD EL MAKSOU, IBRAHIM MAAROF
	Alexandria university

### Publications in SDG 12:

1	Chemical profiling, biostatic and biocidal dynamics of <i>Origanum vulgare</i> L. essential oil (2019) <i>AMB Express</i> , 9 (1), art. no. 41, . Cited 6 times.
	Fikry, S., Khalil, N., Salama, O.
	Future University in Egypt